

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

June 2001

BUDGET ACTIVITY
5 - ENG MANUFACTURING DEV

PE NUMBER AND TITLE
0604802A - Weapons and Munitions Engineering Development

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	56349	32703	7046	0	0	0	0	0	0	0
284 MULTI PURPOSE INDV MUN	16497	14261	0	0	0	0	0	0	0	0
613 MORTAR SYSTEMS	17729	11463	5685	0	0	0	0	0	0	0
695 XM982 PROJECTILE	14481	0	0	0	0	0	0	0	0	0
705 HYDRA 70 ENGINEERING & MANUFACTURING DEVELOPMENT	9	0	0	0	0	0	0	0	0	0
AS1 SMALL ARMS IMPROVEMENT	7633	6979	1361	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.

Provides for engineering development of weapons and munitions systems. The Multi-Purpose Individual Munition (MPIM), a fire-and-forget weapon capable of defeating enemy forces in buildings, bunkers, and lightly armored vehicles, will be terminated at the end of FY 2001. FY 2001 funding will be used to fund contract termination costs as necessary. The mortar systems effort supports development of the Mortar Fire Control System (MFCS). The MFCS is a revolutionary improvement in mortar capability, seamlessly linking mortar fires in the future digital battlefield. Additionally, it funds development of a low cost 60mm training round in FY 2000 and the Precision Guided Mortar Munition in FY 2002 - FY 2005. The XM982 extended range Dual Purpose Improved Conventional Munition (DPICM) is an extended range 155mm artillery projectile. It will extend the range of the M198, M190A5, M190A6, 155mm Paladin and the lightweight Howitzer to approximately 37 kilometers, with the Modular Artillery Charge System (MACS) in Crusader extending the range to 47 kilometers. Beginning in FY 2001, funding for the XM982 Program is in Program Element 0604814, Project D708. The small arms improvement program develops technology to enhance lethality, target acquisition, fire control, training effectiveness, and /or reliability for small arms weapon systems. This project develops a universal mounting bracket for the MK19-3 Grenade Machine Gun.

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<u>B. Program Change Summary</u>	FY 2000	FY 2001	FY 2002	FY 2003
Previous President's Budget (FY2001 PB)	68464	22505	34336	0
Appropriated Value	69143	33005	0	
Adjustments to Appropriated Value	0	0	0	
a. Congressional General Reductions	0	0	0	
b. SBIR / STTR	-1817	0	0	
c. Omnibus or Other Above Threshold Reductions	-279	0	0	
d. Below Threshold Reprogramming	-10298	0	0	
e. Rescissions	-400	-302	0	
Adjustments to Budget Years Since FY2001 PB	0	0	-27290	
Current Budget Submit (FY 2002/2003 PB)	56349	32703	7046	0

Change Summary Expanation:

Funding -FY 2000/FY 2002/FY 2003: PE 64802/D134 (OICW) funds reprogrammed to PE 63802/DAS3 to support OICW Dem/Val.

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BUDGET ACTIVITY 5 - ENG MANUFACTURING DEV				PE NUMBER AND TITLE 0604802A - Weapons and Munitions Engineering Development					PROJECT 613	
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
613 MORTAR SYSTEMS	17729	11463	5685	0	0	0	0	0	0	0

A. Mission Description and Budget Item Justification: This program provides funds to complete development and type classify items that will enhance the effectiveness, lethality, versatility of use, mobility, and accuracy of mortar systems. Current mortar systems include conventional ammunition with a variety of fuzing and applications, weapons that range from man-portable 60mm to vehicle-mounted 120mm mortars, and related equipment such as fire control, mortar ballistic computer, training devices, and ammunition. Current funding for this project completes development of the digital Mortar Fire Control System (MFCS). MFCS is a revolutionary improvement in mortar capability, seamlessly linking mortar fires in the future digital battlefield. MFCS provides an on-board fire control system that includes a fire control computer, position navigation system, and gun pointing system. MFCS allows mortar crews to set-up in one minute, down from the current eight minutes. Accuracy is increased by a factor of four. Shorter exposure times increase crew survivability. The MFCS is fully compatible with the Advanced Field Artillery Tactical Data System (AFATDS), making mortars an integral part of Force XXI and Army 2010 and beyond fire support network. This will increase situational awareness and reduce the probability of fratricide. FY 2001 completes development of the heavy (Mounted) MFCS. Additional FY2001 funds were appropriated to complete development and test of the Mortar Anti-Personnel/Anti-Materiel (MAPAM) and begin development of a 120mm Short Range Training Round (SRTR). The MFCS System supports the legacy to objective transition path of the transformation campaign plan.

FY 2000 Accomplishments

- 2888 Continued Contractor/Government Software Development (MFCS Heavy)
- 3713 Initiated Government Hardware Integration (MFCS Heavy)
- 1525 Initiated Component Test (MFCS Heavy)
- 1723 Completed Developmental Engineering (XM769)
- 806 Initiated Developmental Tests/Operational Tests (DT/OT) (XM769)
- 452 Procured Test Hardware (Ammunition destructive tests) (XM769)
- 6622 Awarded Mortar Anti-Personnel - Anti-Materiel (MAPAM) Contract and Initiated Test Hardware Program

Total 17729

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**0604802A - Weapons and Munitions Engineering
Development**

PROJECT

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FY 2001 Planned Program

- 2732 Complete Version 1 Software Development/Software Test (MFCS Heavy)
- 1039 Development Test (MFCS Heavy)
- 1214 Hardware Integration (MFCS Heavy)
- 1708 Procure MAPAM test hardware for Production Qualification Test (PQT)
- 1860 Conduct PQT for MAPAM
- 1150 Developmental Engineering for MAPAM
- 260 Engineering Test for 120mm SRTR
- 740 Hardware Development for 120mm SRTR
- 419 Developmental Engineering for 120mm SRTR
- 341 Small Business Innovative Research/Small Business Technology Transfer (SBIR/STTR)

Total 11463

FY 2002 Planned Program

- 2880 Hardware Development of MFCS Light
- 1828 Software Development of MFCS Light
- 977 Developmental Engineering for MFCS Light

Total 5685

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<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
Other Procurement, Army-2-: K99300 (MFCS)	0	7273	16785	0	0	0	0	0	0	0
Procurement Ammunition, Army: E92200 XM769 60mm Full Range Practice Round	0	2941	7535	0	0	0	0	0	0	0

C. Acquisition Strategy: Development was started by the prime contractor (L3 Communications-formerly AlliedSignal Corp. of Teterboro, NJ) teamed with a number of subcontractors, and the Government. Because of impending cost growth if L3 Communications continued with the program, the contract was not further funded. Development is being completed as a Government in-house program. Initial production, scheduled for FY 2001, is planned as fixed price competitive system contract. Development of a light forces variant of the MFCS system will begin in FY 2002. This variant will apply MFCS technology to the 81mm and towed 120mm mortars. The Mortar Anti-Personnel - Anti-Material (MAPAM) round is a program to evaluate and type classify a foreign round. Rounds have been procured for comparative testing via sole source contract to SM Swiss Ammunition Enterprise Corp.

<u>D. Schedule Profile</u>	FY 2000	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007
Operational Test (MFCS Heavy)			1Q	0	0	0	0	0
Type Classification (MFCS Heavy) (MS III)			2Q	0	0	0	0	0
First Unit Equipped (MFCS Heavy)			3Q	0	0	0	0	0
Type Classification (MFCS Light)				0	0	0	0	0
First Unit Equipped (MFCS Light)				0	0	0	0	0
Procure NDI Hardware for Evaluation (MAPAM)	4Q			0	0	0	0	0
Conduct Comparative / Safety Tests (MAPAM)		2-3Q		0	0	0	0	0
Prototype Qualification Tests (MAPAM)			1-2Q	0	0	0	0	0
Type Classification (MAPAM)			4Q	0	0	0	0	0
60mm Full Range Practice Round (XM769) Design Review	4Q			0	0	0	0	0
Prototype Qualification Tests (XM769)		1Q		0	0	0	0	0
Type Classification (XM769)		2Q		0	0	0	0	0

ARMY RDT&E COST ANALYSIS(R-3)

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Development

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 . MFCS System Development	Cost Share	L3 Com Teterboro, NJ/TACOM-ARDEC	20221	0		0		0	0	0	0	0
b . MFCS Heavy Software Development	Project Order	TACOM-ARDEC Picatinny Arsenal NJ	1261	1432	1Q	0		0	0	0	0	0
c . MFCS Heavy Hardware Integration	Project Order	TACOM-ACALA Rock Island Ill	333	0		0		0	0	0	0	0
d . MFCS Heavy Hardware Integration	Project Order	TACOM-ARDEC Picatinny Arsenal NJ	2662	1214	1Q	0		0	0	0	0	0
e . MFCS Light Software Development	Contract	To Be Determined	0	0		1500	2Q	0	0	0	0	0
f . MFCS Light Hardware Development	Contract	To Be Determined	0	0		2515	2Q	0	0	0	0	0
g . MAPAM Hardware	SS/FP	SM Swiss AEC Zurich, Switzerland	3661	1558	2Q	0		0	0	0	0	0
h . 120mm SRTR Developmental Engineering	Project Order	TACOM-ARDEC Picatinny Arsenal NJ	0	740	2Q	0		0	0	0	0	0
i . 60mm Full Range Training Round	Project Order	TACOM-ARDEC Picatinny Arsenal NJ	1608	0		0		0	0	0	0	0

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I. Product Development (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
Subtotal:			29746	4944		4015		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 . MFCS Heavy Dev Support	Project Order	TACOM-ARDEC Picatinny Arsenal NJ	3335	1039	2Q	0		0	0	0	0	0
b . MAPAM Dev Support	Project Order	TACOM-ARDEC Picatinny Arsenal NJ	1750	1150	2Q	0		0	0	0	0	0
c . 120mm Short Range Training Rd Dev Support	Project Order	TACOM-ARDEC Picatinny Arsenal NJ	0	419	2Q	0		0	0	0	0	0
d . MFCS Light Dev Support	Project Order	TACOM-ARDEC Picatinny Arsenal NJ	0	0		977	2Q	0	0	0	0	0
e . SBIR/STTR			0	341		0		0	0	0	0	0
Subtotal:			5085	2949		977		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 . MFCS Heavy Component Testing	MIPR	ATEC	1038	0		0		0	0	0	0	0
b . MFCS Heavy Developmental Test	MIPR	ATEC	62	645	2Q	0		0	0	0	0	0
c . MFCS Light User Test	MIPR	ATEC	0	0		0		0	0	0	0	0
d . 60mm FRTR XM769 Production Qualification Test	MIPR	ATEC	806	0		0		0	0	0	0	0
e . 60mm FRTR XM769 Test Hardware	C/FP	Various	452	0		0		0	0	0	0	0
f . MAPAM Foreign Comparative Test	MIPR	TACOM-ARDEC Picatinny Arsenal, NJ	1119	0		0		0	0	0	0	0
g . MAPAM Production Qualification Test	MIPR	ATEC	0	1860	3Q	0		0	0	0	0	0
h . 120mm SRTR Production Qualification Test	MIPR	ATEC	0	260	3Q	0		0	0	0	0	0
Subtotal:			3477	2765		0		0		0	0	0

Remarks: Because the XM769 is a training round only, the testing need only prove out that the round is: 1) safe to use, and 2) accurately simulates the tactical round. Formal operational testing is greatly modified. Test hardware is for components that are common to other 60mm rounds. This will be procured by exercising options on existing production contracts.

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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
a . Mortar Fire Control System	In-house	PM Mortars, Picatinny Arsenal NJ	1002	240	2Q	275	1Q	0	0	0	0	0
b . Mortar Fire Control System	T&N Contract	Robbins-Gioia Inc Alexandria VA	600	0		0		0	0	0	0	0
c . Mortar Fire Control System	T & M Contract	CSC, Eatontown, NJ	345	200	2Q	218	2Q	0	0	0	0	0
d . Mortar Fire Control System	T & M Contract	Applied Ordnance Tech., Waldorf,MD	300	200	2Q	200	2Q	0	0	0	0	0
e . MAPAM	In-house	PM Mortars, Picatinny Arsenal NJ	100	165	2Q	0		0	0	0	0	0
f . 60mm FRTR XM769	In-house	PM Mortars, Picatinny Arsenal NJ	115	0		0		0	0	0	0	0
Subtotal:			2462	805		693		0		0	0	0
Project Total Cost:			40770	11463		5685		0		0	0	0

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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
AS1 SMALL ARMS IMPROVEMENT	7633	6979	1361	0	0	0	0	0	0	0

A. Mission Description and Budget Item Justification: This project addresses the modernization of existing Small Arms Weapon systems. The existing Small Arms Weapon Systems support the Army Transformation Campaign Plan and will be utilized by legacy, interim and objective forces. This program provides funds to develop existing and emerging technology to enhance lethality, target acquisition, fire control, training effectiveness, and reliability for small arms weapon systems and munitions. Current small arms include a variety of personal defense weapons (.38 caliber, .45 caliber; 9mm), individual weapons (5.56mm), crew-served weapons (5.56mm-40mm) and related equipment such as fire control, training devices, hand grenades and ammunition. Current efforts focus on the Rifle Launched Entry Munition, improvements to the M249 Squad Automatic Weapon, M16/M4 Rifle, M203 Grenade Launcher, MK19 Grenade Machine Gun, M240B Medium Machine Gun, ammunition, and hand grenades.

FY 2000 Accomplishments

- 256

• 80

• 204

LIGHTWEIGHT TRIPOD FOR LIGHT MACHINE GUN

Solicitation and Evaluation of Proposals

Completed Milestone (MS) B

Contract Awarded
- 63

• 70

• 73

M249 RAILS/BIPOD/HANDGUARD

Prototype Design

Test Planning & Support

Prototype Design & Fabrication
- 162

• 40

MK 19 MODERN MOUNT

Engineering & Test Hardware samples

Engineering Support
- MK19 REMOTE PLATFORM

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 Development**

PROJECT
AS1

FY 2000 Accomplishments (Continued)

- 372 Completed and Released Request for Proposal (RFP) - Evaluated Proposals
- 30 Contract Awarded
- 572 Designed and Fabricated Prototypes
SMALL ARMS FIRE CONTROL SYSTEM
- 100 MS B
- 2000 Contract Awarded
- 286 Designed & Fabricated Hardware
ENHANCED CAL .50 MACHINE GUN
- 108 Contract Awarded
- 528 Hardware Designed
- 1364 Engineering Tests
RIFLE LAUNCHED ENTRY MUNITION
- 75 Continued Hardware Fabrication
- 1025 Conducted Developmental Testing/Operational Testing (DT/OT)
- 225 MS C/In Process Review (IPR) - Type Classification (TC)-Standard (STD)
- Total 7633

FY 2001 Planned Program

- 155 Hardware Design
LIGHTWEIGHT TRIPOD FOR LIGHT MACHINE GUN
- 280 Fabricate Prototypes
- 195 Engineering Test
- 170 Prototype Modification & Redesign
M249 RAILS/BIPOD/HANDGUARD

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Development**

PROJECT

AS1

FY 2001 Planned Program (Continued)

- 97 Prototype Design & Fabrication Support
- 77 Developmental Test Support
- 103 User Evaluation
- 35 Technical Data Prep
- M249 MACHINE GUN BARREL LIFE EXTENSION PROGRAM
- 40 Prepare and Release RFP
- 30 Receive/Evaluate Proposals, Award Contract
- 300 Contract Execution, Design and Fabrication
- 40 Tech Data Preparation
- MK19 MODERN MOUNT
- 143 Definitize Requirements/Final Acq Strategy/Solicitation Preparation
- 50 Milestone B
- 500 Prototype Hardware Fabrication
- 65 Hardware Evaluation
- 37 Engineering Support
- MK19 REMOTE PLATFORM
- 200 Design, Fabricate Prototypes
- 400 Vehicle Integration & Testing
- SMALL ARMS FIRE CONTROL SYSTEM
- 955 Technical Tests
- 1454 Operational Test (OT)
- ENHANCED CAL .50 MACHINE GUN
- 445 Requirements Validation Testing

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FY 2001 Planned Program (Continued)

- 80 Milestone B
 - 160 Contract Awards
 - 760 Manufacture Weapons
 - 208 Small Business Innovative Research/Small Business Technology Transfer (SBIR/STTR)
- Total 6979

FY 2002 Planned Program

- 330 LIGHTWEIGHT TRIPOD FOR LIGHT MACHINE GUN
Hardware Modification and Retesting
 - 120 Hardware Fabrication
 - 150 Technical Test Start
 - 50 OT Planning
 - 210 M249 MG BARREL LIFE EXTENSION PROGRAM
Final Design, Tooling and Fabrication
 - 71 Technical Testing
 - 91 Tech Data Preparation
 - 96 MK19 MODERN MOUNT
Prototype Hardware Fabrication
 - 193 Hardware Testing & Evaluation
 - 50 Engineering Support
- Total 1361

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PROJECT
AS1

<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
WTCV, GZ1290, Squad Auto Wpn (MODS)	4139	9865	4450	0	0	0	0	0	0	0
WTCV, GZ2800, M16 Rifle MODS	4331	9504	2100	0	0	0	0	0	0	0
WTCV, GB3000, MK19 MODS	1971	1796	745	0	0	0	0	0	0	0
WTCV, GZ1300, Med MG (MODS)	0	491	746	0	0	0	0	0	0	0
PAA, E93500, Rifle Launched Entry Munition	0	3447	2793	0	0	0	0	0	0	0

C. Acquisition Strategy: Primary strategy is to mature and finalize design, award RDTE hardware contracts, and test and evaluate system with ultimate goal of type classification and production award.

<u>D. Schedule Profile</u>	FY 2000	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007
LIGHTWEIGHT TRIPOD FOR LIGHT MACHINE GUN				0	0	0	0	0
Solicitation & Evaluation of Proposals	3Q			0	0	0	0	0
Complete Milestone B	4Q			0	0	0	0	0
Contract Award	4Q			0	0	0	0	0
Design Hardware		2Q		0	0	0	0	0
Fabricate Prototypes		3Q		0	0	0	0	0
Engineering Test		3-4Q		0	0	0	0	0
Prototype Modification & Redesign		4Q	1-2Q	0	0	0	0	0
Hardware Modification & Retesting			1Q	0	0	0	0	0
Hardware Fabrication			3-4Q	0	0	0	0	0
Technical Test Start			4Q	0	0	0	0	0
OT Planning			4Q	0	0	0	0	0
Technical Testing				0	0	0	0	0
Operational Testing				0	0	0	0	0
Independent Evaluation				0	0	0	0	0
Type Classify/MS C				0	0	0	0	0
M249 RAILS/BIPOD/HANDGUARD				0	0	0	0	0

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<u>D. Schedule Profile (continued)</u>	FY 2000	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007
Prototype Designs	1-3Q			0	0	0	0	0
Test Planning & Support	3Q			0	0	0	0	0
Prototype Design & Fabrication Support		1-3Q		0	0	0	0	0
Developmental Test Support		4Q		0	0	0	0	0
User Evaluation		4Q	1Q	0	0	0	0	0
Technical Data Prep			2Q	0	0	0	0	0
M249 RAM IMPROVEMENT/WEIGHT REDUCTION				0	0	0	0	0
Award contract				0	0	0	0	0
Long lead procurements				0	0	0	0	0
Prototype designs				0	0	0	0	0
Prototype fabrication				0	0	0	0	0
Engineering tests				0	0	0	0	0
Final design				0	0	0	0	0
Hardware fabrication				0	0	0	0	0
TT/OT				0	0	0	0	0
Independent Assessment				0	0	0	0	0
ECP				0	0	0	0	0
M249 MACHINE GUN BARREL LIFE EXTENSION				0	0	0	0	0
PROGRAM								
Program release RFP		1-2Q		0	0	0	0	0
Receive/Evaluate Proposals, Award Contract		1-2Q		0	0	0	0	0
Contract Execution, Design & Fabrication		2-4Q		0	0	0	0	0
Technical Data Preparation		3Q		0	0	0	0	0
Final Design, Tooling & Fabrication			1-4Q	0	0	0	0	0
Technical Testing			3-4Q	0	0	0	0	0
Technical Data Preparation				0	0	0	0	0
Tech Eval/Reports				0	0	0	0	0
Tech Data Support				0	0	0	0	0
ECP Prep & Approval				0	0	0	0	0
M249 SHORT RANGE TRAINING AMMUNITION				0	0	0	0	0
Contract award				0	0	0	0	0
Manufacturing Ammunition				0	0	0	0	0
Conduct Developmental Tests				0	0	0	0	0

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D. Schedule Profile (continued)	FY 2000	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007
Obtain Safety Confirmation				0	0	0	0	0
Safety Certification				0	0	0	0	0
Independent assessment reports				0	0	0	0	0
Prepare package				0	0	0	0	0
Staff packages				0	0	0	0	0
Milestone C IPR/TC				0	0	0	0	0
M203 Upgrade				0	0	0	0	0
Finalize requirements				0	0	0	0	0
Competitive contractor selection/award				0	0	0	0	0
Technical assessments/risk reduction				0	0	0	0	0
Prototype Fabrication				0	0	0	0	0
Finalize prototype				0	0	0	0	0
DT/OT				0	0	0	0	0
Independent Evaluations				0	0	0	0	0
Finalize Design				0	0	0	0	0
IPR/TC-STD				0	0	0	0	0
MK19 MODERN MOUNT				0	0	0	0	0
Engineering & Test Hardware Samples	4Q	1Q		0	0	0	0	0
Engineering Support	4Q			0	0	0	0	0
Definitize Requirements/Final Acq Strategy/Solicitation Prep		1-2Q		0	0	0	0	0
Prototype Hardware Fabrication		2Q		0	0	0	0	0
Hardware Evaluation		3-4Q		0	0	0	0	0
Engineering Support		4Q	3-4Q	0	0	0	0	0
Prototype Hardware Fabrication			1-4Q	0	0	0	0	0
Hardware Test & Evaluation			3-4Q	0	0	0	0	0
MK19 REMOTE PLATFORM				0	0	0	0	0
Complete & Release RFP - Evaluate Proposals	1-3Q			0	0	0	0	0
Contract Award		1Q		0	0	0	0	0
Design, Fabricate Prototypes		2-4Q		0	0	0	0	0
Vehicle Integration & Testing		4Q		0	0	0	0	0
Small Arms Fire Control System				0	0	0	0	0

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

June 2001

BUDGET ACTIVITY 5 - ENG MANUFACTURING DEV	PE NUMBER AND TITLE 0604802A - Weapons and Munitions Engineering Development	PROJECT AS1
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D. Schedule Profile (continued)	FY 2000	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007
MS B (Use of FY 2000 c/o)		3Q		0	0	0	0	0
Contract Award (Use of FY 2000 c/o)		3Q		0	0	0	0	0
Design & Fabricate Hardware (Use of FY 2000 c/o & use of FY2001 & FY2001 c/o)		3-4Q	1-4Q	0	0	0	0	0
Technical Tests (Use of FY 2001 c/o)			4Q	0	0	0	0	0
Operational Test (Use of FY 2001 c/o)			4Q	0	0	0	0	0
MK19 SELF-DESTRUCT CARTRIDGE				0	0	0	0	0
Update program documentation/market survey				0	0	0	0	0
Performance Specification				0	0	0	0	0
Small purchase				0	0	0	0	0
Technical evaluation				0	0	0	0	0
Prepare procurement package				0	0	0	0	0
Source selection				0	0	0	0	0
Contract Award				0	0	0	0	0
Engineering Development				0	0	0	0	0
Final Development Test				0	0	0	0	0
Critical Design Review				0	0	0	0	0
M240 WEIGHT REDUCTION				0	0	0	0	0
Contract Award				0	0	0	0	0
Design/Prototype Fabrication				0	0	0	0	0
Engineering Tests				0	0	0	0	0
Program Documentation				0	0	0	0	0
Design Review				0	0	0	0	0
Receive Hardware				0	0	0	0	0
Technical test				0	0	0	0	0
User Test				0	0	0	0	0
Independent Assessment				0	0	0	0	0
TC/MS C				0	0	0	0	0
M240 IMPROVED MACHINE GUN BARREL				0	0	0	0	0
Contract award				0	0	0	0	0
Preliminary Design Completed				0	0	0	0	0
Design Review				0	0	0	0	0

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

June 2001

BUDGET ACTIVITY	PE NUMBER AND TITLE							PROJECT
5 - ENG MANUFACTURING DEV	0604802A - Weapons and Munitions Engineering Development							AS1
D. Schedule Profile (continued)	FY 2000	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007
Fabricate Prototype Hardware				0	0	0	0	0
Test & Evaluation				0	0	0	0	0
Report/ECP				0	0	0	0	0
Enhanced Cal .50 Machine Gun				0	0	0	0	0
Contract Award	4Q			0	0	0	0	0
Hardware Design (Use of FY 2000 c/o)		1-3Q		0	0	0	0	0
Engineering Tests (Use of FY 2000 c/o)		3Q		0	0	0	0	0
Technical Test (Part Use of FY 2001 c/o)			1Q	0	0	0	0	0
Contract Award (Use of FY 2001 c/o)			3Q	0	0	0	0	0
Manufacture Weapons (Use of FY 2001 c/o)			4Q	0	0	0	0	0
LIGHTWEIGHT HAND GRENADE				0	0	0	0	0
Update Concussion/Mini-Frag (C/M-F) prog dev/market survey				0	0	0	0	0
Award C/M-F grenades eng development option				0	0	0	0	0
C/M-F grenades engineering development				0	0	0	0	0
C/M-F final dev test and Critical Design Review				0	0	0	0	0
Award C/M-F grenades Qual Lot fab option				0	0	0	0	0
C/M-F qual hardware mfg				0	0	0	0	0
Initiate C/M-F final development- DT/OT/LFT				0	0	0	0	0
Complete C/M-F DT/OT/LFT				0	0	0	0	0
Prepare C/M-F MS C IPR Package				0	0	0	0	0
C/M-F MS C IPR/TC-STD				0	0	0	0	0
Update Obscuration/Signaling (O/S) grenades program documentation/Market survey				0	0	0	0	0
Award O/S grenades eng dev option				0	0	0	0	0
O/S grenades engineering development				0	0	0	0	0
NON-TOXIC AMMO				0	0	0	0	0
Market Survey/program documentation				0	0	0	0	0
MS B				0	0	0	0	0
Prepare RFP				0	0	0	0	0
Bid sample testing for 9mm				0	0	0	0	0
Source selection				0	0	0	0	0

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

June 2001

BUDGET ACTIVITY
5 - ENG MANUFACTURING DEV

PE NUMBER AND TITLE
0604802A - Weapons and Munitions Engineering
Development

PROJECT
AS1

<u>D. Schedule Profile (continued)</u>	FY 2000	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007
Contract award-Toxic free primer development				0	0	0	0	0
Award contracts for all projectile/cartridge dev				0	0	0	0	0
Toxic free primer development				0	0	0	0	0
Projectiles/cartridges development				0	0	0	0	0
Final development test for toxic free primer				0	0	0	0	0
Final development test for projectiles/cartridges				0	0	0	0	0
Modify cart cont f/ integration of toxic free primer				0	0	0	0	0
Integration of toxic free primer				0	0	0	0	0
Critical design review (CDR)				0	0	0	0	0
Award qual lot fabrication option for 9mm				0	0	0	0	0
Award Qual Lot Fabrication Option for 5.56mm,7.62mm and Cal .50				0	0	0	0	0
Manufacture Qualification Hardware				0	0	0	0	0
Initiate DT/OT/LFT				0	0	0	0	0
Complete DT/OT/LFT				0	0	0	0	0
Prepare MS C IPR Package				0	0	0	0	0
MS C IPR/TC-STD				0	0	0	0	0
Rifle Launched Entry System				0	0	0	0	0
Continue hardware fabrication (FY00 c/o)		2Q		0	0	0	0	0
DT/OT (FY00 c/o)		2-4Q		0	0	0	0	0
MS C IPR/TC-STD (FY00 c/o)		4Q		0	0	0	0	0

ARMY RDT&E COST ANALYSIS(R-3)

June 2001

BUDGET ACTIVITY
5 - ENG MANUFACTURING DEV

PE NUMBER AND TITLE
0604802A - Weapons and Munitions Engineering
Development

PROJECT
AS1

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 . Hardware Development	FP	Multi	6133	2513		662		0	0	0	0	0
Subtotal:			6133	2513		662		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 . Development	MIPR	ARDEC	3574	1710		340		0	0	0	0	0
b . ILS	MIPR	ACALA	96	138		50		0	0	0	0	0
c . HRED	MIPR	APG	134	113		25		0	0	0	0	0
Subtotal:			3804	1961		415		0		0	0	0

ARMY RDT&E COST ANALYSIS(R-3)

June 2001

BUDGET ACTIVITY 5 - ENG MANUFACTURING DEV				PE NUMBER AND TITLE 0604802A - Weapons and Munitions Engineering Development						PROJECT AS1		
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 . DT	MIPR	TECOM	2408	960		120		0	0	0	0	0
b . OT	MIPR	OPTEC	0	953		12		0	0	0	0	0
c . Validation testing	MIPR	TECOM	100	0		32		0	0	0	0	0
d . Below Threshold Reprogramming			114	0		0		0	0	0	0	0
Subtotal:			2622	1913		164		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 . PGM Management	ALLOT	PM Small Arms	907	551		108		0	0	0	0	0
b . Travel	ALLOT	PM Small Arms	102	41		12		0	0	0	0	0
Subtotal:			1009	592		120		0		0	0	0
Project Total Cost:			13568	6979		1361		0		0	0	0