

# DEPARTMENT OF THE ARMY

## Procurement Programs



Committee Staff Procurement Backup Book  
FY 2001 Budget Estimate

### WEAPONS AND TRACKED COMBAT VEHICLES

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APPROPRIATION

February 2000

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## Index for WEAPONS AND TRACKED COMBAT VEHICLES

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DEPARTMENT OF THE ARMY  
2001 PROCUREMENT PROGRAM

EXHIBIT P-1  
February 2000

Appropriation: **\*\*WEAPONS & TRACKED COMBAT VEHICLES\*\***

Activity: **1. \*\*TRACKED COMBAT VEHICLES\*\***

LINE NO.	ITEM NOMENCLATURE	ID	(DOLS) FY 00 UNIT COST	FY 99		FY 00		FY 01	
				QTY	COST	QTY	COST	QTY	COST
				(7)	(8)	(9)	(10)	(11)	(12)
	<b>**TRACKED COMBAT VEHICLES**</b>								
1	ABRAMS TRNG DEV MOD (GA5208)				8,464		2,628		5,331
2	BRADLEY BASE SUSTAINMENT (G80718)	B			361,638		379,945		359,389
					-----		-----		-----
					361,638		379,945		359,389
3	BRADLEY BASE SUSTAINMENT (G80718) ADVANCE PROCUREMENT (CY)								20,006
4	BRADLEY FVS TRAINING DEVICES (G20900)	A			12,157		23,338		12,098
5	HAB TRAINING DEVICES (G84600)				383		14,844		
6	BRADLEY FVS TRAINING DEVICES (MOD) (GZ2500)	A			2,522		4,315		14,038
7	ABRAMS TANK TRAINING DEVICES (GB1300)	A			13,298		8,050		10,504
8	MEDIUM ARMORED VEHICLE FAMILY (G85100)	A							537,077
9	COMMAND & CONTROL VEHICLE (G84200)		B	10	47,712		61,442		
	<b>SUB-ACTIVITY TOTAL</b>				-----		-----		-----
					<b>446,174</b>		<b>494,562</b>		<b>958,443</b>

DEPARTMENT OF THE ARMY  
2001 PROCUREMENT PROGRAM

EXHIBIT P-1  
February 2000

Appropriation: **\*\*WEAPONS & TRACKED COMBAT VEHICLES\*\***

Activity: **1. \*\*TRACKED COMBAT VEHICLES\*\***

LINE NO.	ITEM NOMENCLATURE	ID	(DOLS) FY 00 UNIT COST	FY 99		FY 00		FY 01	
				QTY	COST	QTY	COST	QTY	COST
				(7)	(8)	(9)	(10)	(11)	(12)
	<b>**MODIFICATION OF TRACKED COMBAT VEHICLES**</b>								
10	CARRIER, MOD (GB1930)	A		54,998		62,810		45,111	
11	FIST VEHICLE (MOD) (GZ2300)			24,513		27,115		31,898	
12	BFVS SERIES (MOD) (GZ2400)	A		73,965		31,284		37,142	
13	HOWITZER, MED SP FT 155MM M109A6 (MOD) (GA0400)	A		11,244		26,824		8,060	
14	FAASV PIP TO FLEET (GA8010)	A		3,131		229		5	
15	IMPROVED RECOVERY VEHICLE (M88 MOD) (GA0570)	A		53,588				68,385	
16	BREACHER SYSTEM MOD (GZ3200)					19,513			
17	HEAVY ASSAULT BRIDGE (HAB) SYS (MOD) (GZ3250)			49,978		81,901			
18	ARMORED VEH LAUNCH BRIDGE (AVLB) (MOD) (GZ3000)	A		960		1,437		1,692	
19	AVLB SLEP (GZ3050)	A						15,252	
20	M1 ABRAMS TANK (MOD)(GA0700)	A		25,997		31,645		36,098	
21	MIAID RETROFTT (GA07 20)							891	
22	SYSTEM ENHANCEMENT PGM: SEP M1A2 (GA0730)							16	36,149
23	ABRAMS UPGRADE PROGRAM (G0750)			688,209		680,394			551,828
	LESS ADVANCED PROCUREMENT (PY)			-259,891		-260,738			-213,406
				428,318		419,656			338,422

DEPARTMENT OF THE ARMY  
2001 PROCUREMENT PROGRAM

EXHIBIT P-1  
February 2000

Appropriation: **\*\*WEAPONS & TRACKED COMBAT VEHICLES\*\***

Activity: **1. \*\*TRACKED COMBAT VEHICLES\*\***

LINE NO.	ITEM NOMENCLATURE	ID	(DOLS) FY 00 UNIT COST	FY 99		FY 00		FY 01	
				QTY	COST	QTY	COST	QTY	COST
				(7)	(8)	(9)	(10)	(11)	(12)
24	ABRAMS UPGRADE PROGRSM (GA0750) Adv Procurement				260,738		213,406		174,445
25	MODIFICATIONS LESS THAN \$5.0M (TCV-WTCV) (GA0925)						191		
	<b>SUB-ACTIVITY TOTAL</b>				<b>987,430</b>		<b>916,011</b>		<b>793,550</b>
	<b>**SUPPORT EQUIPMENT AND FACILITIES**</b>								
26	ITEMS LESS THAN \$5.0M (TCV-WTCV) (GL3100)				89		137		135
27	PRODUCTION BASE SUPPORT (TCV-WTCV) (GA0050)				9,670		8,852		9,250
	<b>SUB-ACTIVITY TOTAL</b>				<b>9,759</b>		<b>8,989</b>		<b>9,385</b>
	<b>ACTIVITY TOTAL</b>				<b>1,443,363</b>		<b>1,419,562</b>		<b>1,761,378</b>

DEPARTMENT OF THE ARMY  
2001 PROCUREMENT PROGRAM

EXHIBIT P-1  
February 2000

Appropriation: **\*\*WEAPONS & TRACKED COMBAT VEHICLES\*\***

Activity: **2. \*\*WEAPONS AND OTHER COMBAT VEHICLES\*\***

LINE NO.	ITEM NOMENCLATURE	ID	(DOLS) FY 00 UNIT COST	FY 99		FY 00		FY 01	
				QTY	COST	QTY	COST	QTY	COST
				(7)	(8)	(9)	(10)	(11)	(12)
	<b>**WEAPONS AND OTHER COMBAT VEHICLES**</b>								
28	ARMOR MACHINE GUN, 7.62MM M240 SERIES (G13000)	A		1,198	11,399	4,297	38,364	1,196	12,449
29	MACHINE GUN, 5.56MM (SAW) (G12900)	A		1,525	5,665	3,698	9,903		
30	GRENADE LAUNCHER, AUTO, 40MM, MK19-3 (G13400)	A		697	15,064	1,389	22,883	581	11,835
31	M16 RIFLE (G14900)	A		16,464	6,771	12,479	5,719	10,314	4,793
32	XM107, CAL. 50, SNIPER RIFLE (G01500)						1,133	230	3,085
33	5.56 CARBINE M4 (G14904)	A		6,310	4,194	8,687	5,286	8,309	5,190
	<b>SUB-ACTIVITY TOTAL</b>				<b>43,093</b>		<b>83,288</b>		<b>37,352</b>
	<b>**MODIFICATION OF WEAPONS AND OTHER COMBAT VEH**</b>								
34	MARK-19 MODIFICATIONS (GB3000)						1,971		1,813
35	M4 CARBINE MODS (GB3007)	A			6,721		5,292		2,504
36	SQUAD AUTOMATIC WEAPON (MOD) (GZ1290)						8,289		9,956
37	MEDIUM MACHINE GUNS (MODS)(GZ1300)	A							495
38	HOWITZER, TOWED, 155MM, M198 (MODS) (GA0430)						3,330		3,507
39	M119 MODIFICATIONS (GC0401)	A			4,772		4,763		4,705
40	M16 RIFLE MODS (GZ2800)	A			5,197		7,148		9,592
41	MODIFICATIONS LESS THAN \$5.0M (WOCV-WTCV) (GC0925)				1,118		1,002		787
	<b>SUB-ACTIVITY TOTAL</b>				<b>17,808</b>		<b>31,795</b>		<b>33,359</b>

DEPARTMENT OF THE ARMY  
2001 PROCUREMENT PROGRAM

EXHIBIT P-1  
February 2000

Appropriation: **\*\*WEAPONS & TRACKED COMBAT VEHICLES\*\***

Activity: **2. \*\*WEAPONS AND OTHER COMBAT VEHICLES\*\***

LINE NO.	ITEM NOMENCLATURE	ID	(DOLS) FY 00 UNIT COST	FY 99		FY 00		FY 01	
				QTY	COST	QTY	COST	QTY	COST
				(7)	(8)	(9)	(10)	(11)	(12)
	<b>**SUPPORT EQUIPMENT AND FACILITIES**</b>								
42	ITEMS LESS THAN \$5.0M (WOCV-WTCV) (GL3200)				1,196		1,201		1,182
43	PRODUCTION BASE SUPPORT (WOCV-WTCV) (GC0050)				5,140		4,546		5,152
44	INDUSTRIAL PREPAREDNESS (GC0075)				3,000		3,070		3,604
45	SMALL ARMS (SOLDIER ENH PROG) (GC0076)				2,365		5,133		3,506
	<b>SUB-ACTIVITY TOTAL</b>				<b>11,701</b>		<b>13,950</b>		<b>13,444</b>
	<b>ACTIVITY TOTAL</b>				<b>72,602</b>		<b>129,033</b>		<b>84,155</b>

DEPARTMENT OF THE ARMY  
2001 PROCUREMENT PROGRAM

EXHIBIT P-1  
February 2000

Appropriation: **\*\*WEAPONS & TRACKED COMBAT VEHICLES\*\***

Activity: **3. \*\*SPARES AND REPAIR PARTS\*\***

LINE NO.	ITEM NOMENCLATURE	ID	(DOLS) FY 00 UNIT COST	FY 99		FY 00		FY 01	
				QTY	COST	QTY	COST	QTY	COST
				(7)	(8)	(9)	(10)	(11)	(12)
	<b>**SPARES AND REPAIR PARTS**</b>								
46	SPARES AND REPAIR PARTS (WTCV) (GE0150)				20,075		22,738		29,105
					-----		-----		-----
	<b>SUB-ACTIVITY TOTAL</b>				<b>20,075</b>		<b>22,738</b>		<b>29,105</b>
	<b>ACTIVITY TOTAL</b>				<b>20,075</b>		<b>22,738</b>		<b>29,105</b>
	<b>APPROPRIATION TOTAL</b>				<b>1,536,040</b>		<b>1,571,333</b>		<b>1,874,638</b>

**Exhibit P-40, Budget Item Justification Sheet**

Date: February 2000

Appropriation / Budget Activity/Serial No: PROCUREMENT OF WPNS & TRKD CMBT VEHS / 1 / Tracked Combat Vehicles  
 P-1 Item Nomenclature: ABRAMS TRNG DEV MOD (GA5208)

Program Elements for Code B Items: Code: Other Related Program Elements:

	Prior Years	FY 1997	FY 1998	FY 1999	FY 2000	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	To Complete	Total Prog
Proc Qty												
Gross Cost	18.2	3.2	2.2	8.5	2.6	5.3	5.5	5.5	5.8	3.4		60.1
Less PY Adv Proc												
Plus CY Adv Proc												
Net Proc (P-1)	18.2	3.2	2.2	8.5	2.6	5.3	5.5	5.5	5.8	3.4		60.1
Initial Spares												
Total Proc Cost	18.2	3.2	2.2	8.5	2.6	5.3	5.5	5.5	5.8	3.4		60.1
Flyaway U/C												
Wpn Sys Proc U/C												

**DESCRIPTION:** Funding provided will accomplish modifications to Abrams Training Devices required as a result of changes to the Abrams tanks or tank training requirements. These changes are hardware and software modifications to existing equipment to keep simulators abreast of developments in the Abrams Tank System.

**JUSTIFICATION:** This program meets needs validated by the Abrams user community. Degradation of tank training will occur if these modifications are delayed or deleted. The Conduct of Fire Trainer (COFT) M60A3 to M1 Conversions are for the National Guard units. Annually, 3,016 tank gunner - commander combinations will use the modified COFT. The Conduct of Fire Trainer (COFT) M1 to M1A1, Optical Improvement (OIP) and Armament Enhancement Initiative (AEI) modifications are for units at FORSCOM, USAREUR, TRADOC, and the National Guard.

**Exhibit P-40M Budget Item Justification Sheet**

Date  
February 2000

Appropriation / Budget Activity/Serial No.      P-1 Item Nomenclature  
 PROCUREMENT OF WPNS & TRKD CMBT VEHS / 1 / Tracked Combat Vehicles      ABRAMS TRNG DEV MOD (GA5208)

Program Elements for Code B Items      Code      Other Related Program Elements

Description		Fiscal Years									
OSIP NO.	Classification	FY 1998	FY 1999	FY 2000	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	TC	Total
Conduct of Fire Trainer (COFT) Image Generator (IG) and Computer Rehost/Applique											
1-97-05-4526	Operational	2.2	4.1	0.8	0.8	0.8	0.8	0.8	0.8	0.0	11.1
AGTS/SEP Mod											
1-97-05-4527	Operational	0.0	0.0	0.0	0.6	1.1	2.9	3.5	2.0	0.0	10.1
Tank Driver Trainer Mod (M1A2 SEP Upgrade)											
1-97-05-4528	Operational	0.0	3.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	3.4
Close Combat Tactical Trainer (CCTT)/SEP Mod											
1-97-05-4529	Operational	0.0	0.0	0.2	0.6	2.2	1.6	1.3	0.4	0.0	6.3
Maintenance Training System (MTS) SEP Mod											
1-97-05-4530	Operational	0.0	1.0	1.6	3.3	1.4	0.2	0.2	0.2	0.0	7.9
<b>Totals</b>		<b>2.2</b>	<b>8.5</b>	<b>2.6</b>	<b>5.3</b>	<b>5.5</b>	<b>5.5</b>	<b>5.8</b>	<b>3.4</b>	<b>0.0</b>	<b>38.8</b>



INDIVIDUAL MODIFICATION

Date February 2000

MODIFICATION TITLE (Cont): Conduct of Fire Trainer (COFT) Image Generator (IG) and Computer Rehost/Applique 1-97-05-4526

FINANCIAL PLAN: (\$ in Millions)

	FY 1998 and Prior		FY 1999		FY 2000		FY 2001		FY 2002		FY 2003		FY 2004		FY 2005		TC		TOTAL			
	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$		
RDT&E																						
PROCUREMENT																						
Kit Quantity	1	0.1	9	1.6	5	0.8	4	0.8	4	0.8	4	0.8	4	0.8	4	0.8					35	6.5
Installation Kits		2.1		2.5																		4.6
Installation Kits, Nonrecurring Equipment																						
Equipment, Nonrecurring Engineering Change Orders Data																						
Training Equipment																						
Support Equipment																						
Other																						
Interim Contractor Support																						
Installation of Hardware																						
FY 1998 & Prior Eqpt -- Kits																						
FY 1999 Eqpt -- Kits																						
FY 2000 Eqpt -- Kits																						
FY 2001 Eqpt -- Kits																						
FY 2002 Eqpt -- kits																						
FY 2003 Eqpt -- kits																						
FY 2004 Eqpt -- kits																						
FY 2005 Eqpt -- kits																						
TC Equip-Kits																						
Total Installment																						
Total Procurement Cost		2.2		4.1		0.8		0.8		0.8		0.8		0.8		0.8						11.1

**INDIVIDUAL MODIFICATION**

Date February 2000

**MODIFICATION TITLE:** AGTS/SEP Mod 1-97-05-4527

**MODELS OF SYSTEMS AFFECTED:** M1A2 Advanced Gunnery Training System

**DESCRIPTION / JUSTIFICATION:**

This funding will modify existing M1A2 Advanced Gunnery Training Simulators to represent the most recent SEP changes to the M1A2. It is cheaper to modify existing training devices than to procure new ones.

**DEVELOPMENT STATUS / MAJOR DEVELOPMENT MILESTONES:**

PLANNED

ACCOMPLISHED

Contractor Test and Evaluation: 3Q03

Initial Operational Test and Evaluation: 4Q03

**Installation Schedule:**

Pr Yr	FY 1999				FY 2000				FY 2001				FY 2002				FY 2003			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
<b>Totals</b>														2					4	
<b>Inputs</b>																				
<b>Outputs</b>																			2	

  

	FY 2004				FY 2005				FY 2006				FY 2007				To Complete	Totals		
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4				
<b>Inputs</b>		4				4														14
<b>Outputs</b>		4				4				4										14

**METHOD OF IMPLEMENTATION:** Contractor ADMINISTRATIVE LEADTIME: 6 Months PRODUCTION LEADTIME: 18 Months

Contract Dates: FY 1999 FY 2000 FY 2001 Jan 01

Delivery Date: FY 1999 FY 2000 FY 2001 Jan 03

INDIVIDUAL MODIFICATION

Date February 2000

MODIFICATION TITLE (Cont): AGTS/SEP Mod 1-97-05-4527

FINANCIAL PLAN: (\$ in Millions)

	FY 1998 and Prior		FY 1999		FY 2000		FY 2001		FY 2002		FY 2003		FY 2004		FY 2005		TC		TOTAL		
	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	
RDT&E																					
PROCUREMENT																					
Kit Quantity																					
Installation Kits									2	1.1		4	2.9	4	2.1	4	2.0			14	8.1
Installation Kits, Nonrecurring Equipment							0.6							1.4							2.0
Equipment, Nonrecurring																					
Engineering Change Orders																					
Data																					
Training Equipment																					
Support Equipment																					
Other																					
Interim Contractor Support																					
Installation of Hardware																					
FY 1998 & Prior Eqpt -- Kits																					
FY 1999 Eqpt -- Kits																					
FY 2000 Eqpt -- Kits																					
FY 2001 Eqpt -- Kits																					
FY 2002 Eqpt -- kits																					
FY 2003 Eqpt -- kits																					
FY 2004 Eqpt -- kits																					
FY 2005 Eqpt -- kits																					
TC Equip-Kits																					
Total Installment																					
Total Procurement Cost							0.6		1.1		2.9		3.5		2.0						10.1

**INDIVIDUAL MODIFICATION**

Date February 2000

**MODIFICATION TITLE:** Tank Driver Trainer Mod (M1A2 SEP Upgrade) 1-97-05-4528

**MODELS OF SYSTEMS AFFECTED:** M1A1 Tank Driver Trainer

**DESCRIPTION / JUSTIFICATION:**

The Tank Driver Trainer (TDT) simulates actual tank performance for beginner and transitioning drivers. It provides a range of motion and simulated environments, terrain and situations which are difficult or impossible for the driver to experience in normal training or operations. The M1A2 driver's compartment and tasks are significantly different from the M1A1. This project upgrades existing M1A1 Tank Driver Trainers at the Armor School to match student enrollment as more M1A2s enter the field.

**DEVELOPMENT STATUS / MAJOR DEVELOPMENT MILESTONES:**

PLANNED

ACCOMPLISHED

Contractor Test and Evaluation: 3Q00

Initial Operational Test and Evaluation: 4Q00

**Installation Schedule:**

Pr Yr	FY 1999				FY 2000				FY 2001				FY 2002				FY 2003			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
<b>Totals</b>																				
<b>Inputs</b>			1			1				1										
<b>Outputs</b>								1				1				1				

	FY 2004				FY 2005				FY 2006				FY 2007				To Complete	Totals		
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4				
<b>Inputs</b>																				3
<b>Outputs</b>																				3

**METHOD OF IMPLEMENTATION:** Contractor ADMINISTRATIVE LEADTIME: 6 Months PRODUCTION LEADTIME: 12 Months

Contract Dates: FY 1999 Jun 99 FY 2000 FY 2001

Delivery Date: FY 1999 Dec 00 FY 2000 FY 2001

INDIVIDUAL MODIFICATION

Date

February 2000

MODIFICATION TITLE (Cont): Tank Driver Trainer Mod (M1A2 SEP Upgrade) 1-97-05-4528

FINANCIAL PLAN: (\$ in Millions)

	FY 1998 and Prior		FY 1999		FY 2000		FY 2001		FY 2002		FY 2003		FY 2004		FY 2005		TC		TOTAL		
	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	
RDT&E																					
PROCUREMENT																					
Kit Quantity			3	1.5																3	1.5
Installation Kits				1.9																	1.9
Installation Kits, Nonrecurring																					
Equipment																					
Equipment, Nonrecurring																					
Engineering Change Orders																					
Data																					
Training Equipment																					
Support Equipment																					
Other																					
Interim Contractor Support																					
Installation of Hardware																					
FY 1998 & Prior Eqpt -- Kits																					
FY 1999 Eqpt -- Kits																					
FY 2000 Eqpt -- Kits																					
FY 2001 Eqpt -- Kits																					
FY 2002 Eqpt -- kits																					
FY 2003 Eqpt -- kits																					
FY 2004 Eqpt -- kits																					
FY 2005 Eqpt -- kits																					
TC Equip-Kits																					
Total Installment																					
Total Procurement Cost				3.4																	3.4

**INDIVIDUAL MODIFICATION**

Date February 2000

**MODIFICATION TITLE:** Close Combat Tactical Trainer (CCTT)/SEP Mod 1-97-05-4529

**MODELS OF SYSTEMS AFFECTED:** Close Combat Tactical Trainer (CCTT)

**DESCRIPTION / JUSTIFICATION:**

This funding will modify existing Close Combat Tactical Trainer modules to represent the most recent SEP changes to the M1A2.

**DEVELOPMENT STATUS / MAJOR DEVELOPMENT MILESTONES:**

PLANNED

ACCOMPLISHED

Contractor Test and Evaluation: 3Q02

Initial Operational Test and Evaluation: 4Q02

**Installation Schedule:**

Pr Yr	FY 1999				FY 2000				FY 2001				FY 2002				FY 2003				
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	
<b>Totals</b>													18				8				8
<b>Inputs</b>																					
<b>Outputs</b>															18						8

  

Pr Yr	FY 2004				FY 2005				FY 2006				FY 2007				To Complete	Totals			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4					
<b>Inputs</b>	12				4																42
<b>Outputs</b>				12				4													42

**METHOD OF IMPLEMENTATION:** Contractor ADMINISTRATIVE LEADTIME: 6 Months PRODUCTION LEADTIME: 15 Months

Contract Dates: FY 1999 FY 2000 Mar 00 FY 2001 Jan 01

Delivery Date: FY 1999 FY 2000 FY 2001

INDIVIDUAL MODIFICATION

Date February 2000

MODIFICATION TITLE (Cont): Close Combat Tactical Trainer (CCTT)/SEP Mod 1-97-05-4529

FINANCIAL PLAN: (\$ in Millions)

	FY 1998 and Prior		FY 1999		FY 2000		FY 2001		FY 2002		FY 2003		FY 2004		FY 2005		TC		TOTAL		
	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	
RDT&E																					
PROCUREMENT																					
Kit Quantity																					
Installation Kits									18	2.2		8	1.6	12	1.3	4	0.4			42	5.5
Installation Kits, Nonrecurring					0.2		0.6														0.8
Equipment																					
Equipment, Nonrecurring																					
Engineering Change Orders																					
Data																					
Training Equipment																					
Support Equipment																					
Other																					
Interim Contractor Support																					
Installation of Hardware																					
FY 1998 & Prior Eqpt -- Kits																					
FY 1999 Eqpt -- Kits																					
FY 2000 Eqpt -- Kits																					
FY 2001 Eqpt -- Kits																					
FY 2002 Eqpt -- kits																					
FY 2003 Eqpt -- kits																					
FY 2004 Eqpt -- kits																					
FY 2005 Eqpt -- kits																					
TC Equip-Kits																					
Total Installment																					
Total Procurement Cost					0.2		0.6		2.2		1.6		1.3		0.4						6.3



INDIVIDUAL MODIFICATION

Date

February 2000

MODIFICATION TITLE (Cont): Maintenance Training System (MTS) SEP Mod 1-97-05-4530

FINANCIAL PLAN: (\$ in Millions)

	FY 1998 and Prior		FY 1999		FY 2000		FY 2001		FY 2002		FY 2003		FY 2004		FY 2005		TC		TOTAL		
	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	
RDT&E																					
PROCUREMENT																					
Kit Quantity																					
Installation Kits							2	3.3	VAR	1.4									2	4.7	
Installation Kits, Nonrecurring Equipment			1.0		1.6						0.2		0.2		0.2					3.2	
Equipment, Nonrecurring																					
Engineering Change Orders																					
Data																					
Training Equipment																					
Support Equipment																					
Other																					
Interim Contractor Support																					
Installation of Hardware																					
FY 1998 & Prior Eqpt -- Kits																					
FY 1999 Eqpt -- Kits																					
FY 2000 Eqpt -- Kits																					
FY 2001 Eqpt -- Kits																					
FY 2002 Eqpt -- kits																					
FY 2003 Eqpt -- kits																					
FY 2004 Eqpt -- kits																					
FY 2005 Eqpt -- kits																					
TC Equip-Kits																					
Total Installment																					
Total Procurement Cost			1.0		1.6		3.3		1.4		0.2		0.2		0.2					7.9	

**Exhibit P-40, Budget Item Justification Sheet**

Date: February 2000

Appropriation / Budget Activity/Serial No: PROCUREMENT OF WPNS & TRKD CMBT VEHS / 1 / Tracked Combat Vehicles  
 P-1 Item Nomenclature: BRADLEY BASE SUSTAINMENT (G80718)

Program Elements for Code B Items: Code: Other Related Program Elements:

	Prior Years	FY 1997	FY 1998	FY 1999	FY 2000	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	To Complete	Total Prog
Proc Qty	465	80	98	126	140	109	142	142	130	143	237	1812
Gross Cost	591.8	250.9	225.2	361.6	379.9	359.4	408.3	405.7	412.5	438.8	874.9	4709.0
Less PY Adv Proc							11.6	11.4		11.7	19.1	53.6
Plus CY Adv Proc						20.0	2.9		26.0	4.7		53.6
Net Proc (P-1)	591.8	250.9	225.2	361.6	379.9	379.4	399.6	394.3	438.5	431.8	855.8	4709.0
Initial Spares	4.9	2.3	0.3	7.1	9.1	11.5	10.7	10.8	5.1	5.1	50.0	117.0
Total Proc Cost	596.7	253.2	225.5	368.7	389.0	390.9	410.3	405.2	443.7	436.9	905.8	4826.0
Flyaway U/C												
Wpn Sys Proc U/C	1.3	3.2	2.3	2.9	2.8	3.6	2.9	2.9	3.4	3.1	3.8	2.7

**DESCRIPTION:** The Bradley Base Sustainment Program initiated a program to upgrade first generation Bradleys(A0) into the A2 configuration and bridge the production gap until the introduction of the A3 upgrade vehicles. FY97-00 provides four years of A3 LRIP vehicles. FY01 marks the first full rate production year of the A3 configuration. The upgraded A3 Bradley Fighting Vehicle will facilitate enhanced command and control, provide greater lethality, survivability, mobility, and sustainability required to defeat current and future threat forces while remaining operationally compatible with the main battle tank.

**JUSTIFICATION:** The FY01 Budget will provide the first year of full rate of production for the A3 upgrade program. The A3 upgrade program will provide digital communications and target acquisition upgrades required to fight as a member of the combined arms team. These vehicles will be remanufactured in the prime contractor's plant to preserve the critical skills and vendor base to allow for future modernization.

Quantities are all A0-A2's in FY96 and prior; 45 A0-A2 Linebackers and 35 A3's in FY97; 80 A0-A2ODS and 18 A3's in FY98; 53 A2ODS and 73 A3's in fy99; 60 A2ODS and and 80A3's in FY00; and all A3's thereafter.

A three year multi-year contract is planned for FY's 01-03.

**Exhibit P-40C Budget Item Justification Sheet**

Date

February 2000

Appropriation / Budget Activity/Serial No.

PROCUREMENT OF WPNS & TRKD CMBT VEHS / 1 / Tracked Combat Vehicles

P-1 Item Nomenclature

BRADLEY BASE SUSTAINMENT (G80718)

Program Elements for Code B Items

Code

Other Related Program Elements

A3 Advanced Procurement Detail (in Mils):	Fiscal Year	2001	2002	2003	2004	2005	2006	2007
FY TOA								
FY2001 for FY2002 (memo)		11.564						
FY2001 for FY2003 (memo)		8.442						
FY2002 (memo)			(11.564)					
FY2002 for FY2003 (memo)			2.920					
FY2003 (memo)				(11.362)				
FY2004 for FY2005 (memo)					11.657			
FY2004 for FY2006 (memo)					7.218			
FY2004 for FY2007 (memo)					7.160			
FY2005 (memo)						(11.657)		
FY2005 for FY2006 (memo)						2.344		
FY2005 for FY2007 (memo)						2.328		
FY2006 (memo)							(9.562)	
FY2007 (memo)								(9.488)

<b>Exhibit P-5, Weapon WTCV Cost Analysis</b>		Appropriation/ Budget Activity/Serial No: PROCUREMENT OF WPNS & TRKD CMBT VEHS / 1 / Tracked Combat Vehicles			P-1 Line Item Nomenclature: BRADLEY BASE SUSTAINMENT (G80718)			Weapon System Type:			Date: February 2000		
<b>Cost Elements</b>	ID CD	<b>FY 98</b>			<b>FY 99</b>			<b>FY 00</b>			<b>FY 01</b>		
		TotalCost	Qty	UnitCost	TotalCost	Qty	UnitCost	TotalCost	Qty	UnitCost	TotalCost	Qty	UnitCost
		\$000	Each	\$000	\$000	Each	\$000	\$000	Each	\$000	\$000	Each	\$000
BRADLEY BASE SUSTAINMENT (A2)					91536			80720			6125		
BRADLEY BASE SUSTAINMENT (A3)					270102			299225			373270		
<b>TOTAL</b>					<b>361638</b>			<b>379945</b>			<b>379395</b>		

**Exhibit P-40, Budget Item Justification Sheet**

Date: February 2000

Appropriation / Budget Activity/Serial No: PROCUREMENT OF WPNS & TRKD CMBT VEHS / 1 / Tracked Combat Vehicles  
 P-1 Item Nomenclature: BRADLEY BASE SUSTAINMENT (M2A2) (G80716)

Program Elements for Code B Items: Code: Other Related Program Elements:

	Prior Years	FY 1997	FY 1998	FY 1999	FY 2000	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	To Complete	Total Prog
Proc Qty	465	45	80	53	60							703
Gross Cost	591.8	70.7	113.4	91.5	80.7	6.1	0.0	0.0	26.1	21.6	0.0	1002.0
Less PY Adv Proc												
Plus CY Adv Proc												
Net Proc (P-1)	591.8	70.7	113.4	91.5	80.7	6.1	0.0	0.0	26.1	21.6		1002.0
Initial Spares	4.9	2.3										7.2
Total Proc Cost	596.7	73.0	113.4	91.5	80.7	6.1	0.0	0.0	26.1	21.6	0.0	1009.2
Flyaway U/C												
Wpn Sys Proc U/C	1.3	1.6	1.4	1.7	1.3							

**DESCRIPTION:** The Bradley Base Sustainment Program initiated a program to upgrade first generation Bradleys(A0) into the A2 configuration and bridge the production gap until the introduction of the A3 upgrade vehicles. FY99 marks the third production year of the A3 configuration. The upgraded A3 Bradley Fighting Vehicle will facilitate enhanced command and control, provide greater lethality, survivability, mobility, and sustainability required to defeat current and future threat forces while remaining operationally compatible with the main battle tank.

Quantities are all A0-A2's in FY96 and prior, 45 A0-A2 Linebackers FY97, and 80, 53 and 60 A0-A2ODS's in FY 98, 99 and 00 respectively.

<b>Exhibit P-5, Weapon WTCV Cost Analysis</b>		Appropriation/ Budget Activity/Serial No: PROCUREMENT OF WPNS & TRKD CMBT VEHS / 1 / Tracked Combat Vehicles			P-1 Line Item Nomenclature: BRADLEY BASE SUSTAINMENT (M2A2) (G80716)			Weapon System Type:			Date: February 2000		
<b>Cost Elements</b>	ID CD	<b>FY 98</b>			<b>FY 99</b>			<b>FY 00</b>			<b>FY 01</b>		
		TotalCost	Qty	UnitCost	TotalCost	Qty	UnitCost	TotalCost	Qty	UnitCost	TotalCost	Qty	UnitCost
					\$000	Each	\$000	\$000	Each	\$000	\$000	Each	\$000
1. VEHICLE					43767	53	826	50217	60	837			
2. Other GFE (New)					5978	53	113	7043	60	117			
3. Other GFE (Reman)					3127	53	59	2971	60	50			
4. Contractor Engineering					9632			12374					
5. National Guard Fielding					4930			4911					
<b>SUBTOTAL</b>					<b>67434</b>			<b>77516</b>					
6. Linebacker Engineering - Contractor					4560								
7. Linebacker Engineering - Government					1650								
<b>SUBTOTAL</b>					<b>6210</b>								
8. PSE					8000								
9. BFVS Fielding					9892			3204			6125		
<b>TOTAL</b>					<b>91536</b>			<b>80720</b>			<b>6125</b>		

### Exhibit P-5a, Budget Procurement History and Planning

Date: February 2000

Appropriation / Budget Activity/Serial No: **PROCUREMENT OF WPNS & TRKD CMBT VEHS / 1 / Tracked**  
**Combat Vehicles**

Weapon System Type:

P-1 Line Item Nomenclature: **BRADLEY BASE SUSTAINMENT (M2A2) (G80716)**

WBS Cost Elements: Fiscal Years	Contractor and Location	Contract Method and Type	Location of PCO	Award Date	Date of First Delivery	QTY Each	Unit Cost \$000	Specs Avail Now?	Date Revsn Avail	RFP Issue Date
<b>1. VEHICLE</b>										
FY 99	UDLP, York PA	SS/FFP	TACOM	Aug-99	Jan-01	53	826	Yes	No	
FY 00	UDLP, York PA	SS/FFP	TACOM	Mar-00	Oct-01	60	837	Yes	No	

REMARKS:

FY 00 / 01 BUDGET PRODUCTION SCHEDULE							P-1 Item Nomenclature: BRADLEY BASE SUSTAINMENT (M2A2/) (G80716)													Date: February 2000											
COST ELEMENTS	MFR	FY	SERV	PROC QTY Each	ACCEP. PRIOR TO 1 OCT	BAL DUE AS OF 1 OCT	Fiscal Year 98												Fiscal Year 99												LATER
							Calendar Year 98												Calendar Year 99												
							OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	
1. VEHICLE	1	97& PR	A	505	335	170	14	14	12	11	9	10	10	10	10	6	8	8	7	8	8	4	4	4	4	3	2	2	2		
	1	FY 98	A	80	0	80									A														3	77	
	1	FY 99	A	53	0	53																							A	53	
	1	FY 00	A	60	0	60																								60	

  

MFR	NAME / LOCATION	PRODUCTION RATES			REACHED D +	MFR Number	ADMIN LEAD TIME		MFR After 1 Oct.	TOTAL After 1 Oct.	REMARKS
		MIN.	1-8-5	MAX.			Prior 1 Oct.	After 1 Oct.			
1	UDLP, York PA	8	8	20	6	INITIAL	8	1	18	19	
						REORDER	2	9	15	24	
						INITIAL					
						REORDER					
						INITIAL					
						REORDER					
						INITIAL					
						REORDER					
						INITIAL					
						REORDER					





**Exhibit P-40, Budget Item Justification Sheet**

Date: February 2000

Appropriation / Budget Activity/Serial No: PROCUREMENT OF WPNS & TRKD CMBT VEHS / 1 / Tracked Combat Vehicles  
 P-1 Item Nomenclature: BRADLEY BASE SUSTAINMENT (M2A3) (G80717)

Program Elements for Code B Items: Code: Other Related Program Elements:

	Prior Years	FY 1997	FY 1998	FY 1999	FY 2000	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	To Complete	Total Prog
Proc Qty		35	18	73	80	109	142	142	130	143	237	1109
Gross Cost	0.0	180.2	111.8	270.1	299.2	353.3	408.3	405.7	386.4	417.1	874.9	3707.0
Less PY Adv Proc							11.6	11.4		11.7	19.1	53.6
Plus CY Adv Proc						20.0	2.9		26.0	4.7		53.6
Net Proc (P-1)	0.0	180.2	111.8	270.1	299.2	373.3	399.6	394.3	412.4	410.2	855.8	3707.0
Initial Spares			0.3	7.1	9.1	11.5	10.7	10.8	5.1	5.1	50.0	109.8
Total Proc Cost	0.0	180.2	112.1	277.2	308.3	384.8	410.3	405.2	417.6	415.3	905.8	3816.7
Flyaway U/C												
Wpn Sys Proc U/C		5.1	6.2	3.8	3.9	3.5	2.9	2.9	3.2	2.9	3.8	3.4

**DESCRIPTION:** The Bradley Base Sustainment Program initiated a program to upgrade first generation Bradleys(A0) into the A2 configuration and bridge the production gap until the introduction of the A3 upgrade vehicles. FY97-00 provides the first four years of A3 LRIP vehicles. FY01 marks the first full rate production year of the A3 configuration. The upgraded A3 Bradley Fighting Vehicle will facilitate enhanced command and control, provide greater lethality, survivability, mobility, and sustainability required to defeat current and future threat forces while remaining operationally compatible with the main battle tank.

**JUSTIFICATION:** The FY01 Budget will provide the first full rate production year for the A3 upgrade program. The A3 upgrade program will provide digital communications and target acquisition upgrades required to fight as a member of the combined arms team. These vehicles will be remanufactured in the prime contractor's plant to preserve the critical skills and vendor base to allow for future modernization.

A three year multi-year contract is planned for FY's 01-03.

**Exhibit P-40C Budget Item Justification Sheet**

Date

February 2000

Appropriation / Budget Activity/Serial No.

PROCUREMENT OF WPNS & TRKD CMBT VEHS / 1 / Tracked Combat Vehicles

P-1 Item Nomenclature

BRADLEY BASE SUSTAINMENT (M2A3) (G80717)

Program Elements for Code B Items

Code

Other Related Program Elements

A3 Advanced Procurement Detail (in Mils):	Fiscal Year	2001	2002	2003	2004	2005	2006	2007
FY TOA								
FY2001 for FY2002 (memo)		11.564						
FY2001 for FY2003 (memo)		8.442						
FY2002 (memo)			(11.564)					
FY2002 for FY2003 (memo)			2.920					
FY2003 (memo)				(11.362)				
FY2004 for FY2005 (memo)					11.657			
FY2004 for FY2006 (memo)					7.218			
FY2004 for FY2007 (memo)					7.160			
FY2005 (memo)						(11.657)		
FY2005 for FY2006 (memo)						2.344		
FY2005 for FY2007 (memo)						2.328		
FY2006 (memo)							(9.562)	
FY2007 (memo)								(9.488)

<b>Exhibit P-5, Weapon WTCV Cost Analysis</b>		Appropriation/ Budget Activity/Serial No: PROCUREMENT OF WPNS & TRKD CMBT VEHS / 1 / Tracked Combat Vehicles			P-1 Line Item Nomenclature: BRADLEY BASE SUSTAINMENT (M2A3) (G80717)			Weapon System Type:			Date: February 2000		
Cost Elements	ID CD	FY 98			FY 99			FY 00			FY 01		
		TotalCost	Qty	UnitCost	TotalCost	Qty	UnitCost	TotalCost	Qty	UnitCost	TotalCost	Qty	UnitCost
					\$000	Each	\$000	\$000	Each	\$000	\$000	Each	\$000
1. Vehicle					126480	73	1733	141575	80	1770	168761	109	1548
2. IBAS					42482	73	582	31203	80	390	39818	109	365
3. FLIR					37353	76	491	32778	80	410	44448	109	408
4. Other GFE					6572	73	90	10324	80	129	9049	109	83
5. Reman (Contractor)					11277	73	154		80			109	
6. Pre Mod Depot Maint					1591	73	22	1573	80	20	2059	109	19
<b>SUBTOTAL</b>					<b>225755</b>			<b>217453</b>			<b>264135</b>		
7. Engineering--Government					14605			14516			14734		
8. Engineering--Contractor					17234			37773			44046		
9. Project Management Administration					3099			3115			3162		
10. Reimbursable Matrix Support					3013			3367			3454		
11. Test and Evaluation					5969			8135			1030		
<b>SUBTOTAL</b>					<b>43920</b>			<b>66906</b>			<b>66426</b>		
12. Cummins Engine Life-of-Type (LOT) Buy													
13. Peculiar Support Equipment								8068			14418		
14. Classroom Spares													
15. Fielding					427			6798			8285		
<b>SUBTOTAL</b>					<b>427</b>			<b>14866</b>			<b>22703</b>		
<b>TOTAL</b>					<b>270102</b>			<b>299225</b>			<b>353264</b>		
<b>Gross P-1 End Cost</b>					<b>270102</b>			<b>299225</b>			<b>353264</b>		
Less: Prior Year Adv Proc													
<b>Net P-1 Full Funding Cost</b>					<b>270102</b>			<b>299225</b>			<b>353264</b>		
Plus: P-1 CY Adv Proc											20006		
Other Non P-1 Costs													
Initial Spares					7070			9132			11516		
Mods													
<b>TOTAL</b>					<b>277172</b>			<b>308357</b>			<b>384786</b>		

### Exhibit P-5a, Budget Procurement History and Planning

Date:  
February 2000

Appropriation / Budget Activity/Serial No: PROCUREMENT OF WPNS & TRKD CMBT VEHS / 1 / Tracked Combat Vehicles				Weapon System Type:		P-1 Line Item Nomenclature: BRADLEY BASE SUSTAINMENT (M2A3) (G80717)				
WBS Cost Elements: Fiscal Years	Contractor and Location	Contract Method and Type	Location of PCO	Award Date	Date of First Delivery	QTY Each	Unit Cost \$000	Specs Avail Now?	Date Revsn Avail	RFP Issue Date
<b>1. Vehicle</b>										
FY 99	UDLP, York PA	SS/FFP	TACOM	Nov-98	Mar-00	73	1733	YES	NO	
FY 00	UDLP, York PA	SS/FFP	TACOM	May-00	Apr-01	80	1770	YES	NO	
FY 01	UDLP, York PA	MY/FFP	TACOM	Mar-01	Apr-02	109	1548	YES	NO	
<b>2. IBAS</b>										
FY 99	RTIS, DALLAS TX/ DRS CA	C/FFP	AMCOM	Nov-98	Feb-00	73	582	YES	NO	
FY 00	RTIS, DALLAS TX/ DRS CA	C/FFP	AMCOM	Jan-00	Feb-01	80	390	YES	NO	
FY 01	TBD	MY/FFP	AMCOM	Dec-00	Feb-02	109	365	YES	NO	
<b>3. FLIR</b>										
FY 99	RTIS, DALLAS TX	SS/FFP	NVL	Jan-99	Dec-99	76	491	YES	NO	
FY 00	RTIS, DALLAS TX	MY/FFP	NVL	Jan-00	Dec-00	80	410	YES	NO	
FY 01	RTIS, DALLAS TX	MY/FFP	NVL	Jan-01	Dec-01	109	408	YES	NO	

**REMARKS:** Multi year procurements (FY01-03) for Vehicle, and IBAS.  
Multi year procurement (FY00-01) for FLIR











**Exhibit P-40, Budget Item Justification Sheet**

Date:

February 2000

Appropriation / Budget Activity/Serial No:

PROCUREMENT OF WPNS & TRKD CMBT VEHS / 1 / Tracked Combat Vehicles

P-1 Item Nomenclature:

BRADLEY BASE SUSTAINMENT (ADV PROC) (G80718)

Program Elements for Code B Items:

Code:

Other Related Program Elements:

	Prior Years	FY 1997	FY 1998	FY 1999	FY 2000	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	To Complete	Total Prog
Proc Qty												
Gross Cost	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Less PY Adv Proc												
Plus CY Adv Proc			0.0	0.0	0.0	20.0	2.9	0.0	26.0	4.7		53.6
Net Proc (P-1)	0.0	0.0	0.0	0.0	0.0	20.0	2.9	0.0	26.0	4.7	0.0	53.6
Initial Spares												
Total Proc Cost	0.0	0.0	0.0	0.0	0.0	20.0	2.9	0.0	26.0	4.7	0.0	53.6
Flyaway U/C												
Wpn Sys Proc U/C												

DESCRIPTION: Advance Procurement for EOQ material.

JUSTIFICATION: EOQ funding supports more economical buys than can be achieved with single year procurements.

<b>Advance Procurement Requirements Analysis-Funding (P-10A)</b>				First System Award Date: December 1999				First System Completion Date: April 2001				Date: February 2000		
Appropriation / Budget Activity/Serial No: PROCUREMENT OF WPNS & TRKD CMBT VEHS / 1 / Tracked Combat Vehicles							P-1 Line Item Nomenclature / Weapon System: BRADLEY BASE SUSTAINMENT (ADV PROC) (G80717)							
(\$ in Millions)														
	PLT (mos)	When Req'd*	Prior Years	1997	1998	1999	2000	2001	2002	2003	2004	2005	To Comp	Total
Economic Order Quantity				35	18	73	80	109	142	142	130	143	237	1109
1. Vehicle	17							2.1			2.8			4.9
2. Flat Panel Display	6							0.8			1.1			1.9
3. Commander's Independent Viewer	12							4.0			5.9			9.9
4. POS/NAV	6							0.7			0.9			1.6
5. Turret Processing Unit	12							0.8			1.1			1.9
6. Hull Processing Unit	12							0.5			0.6			1.1
7. Gunner's Hand Station	6							0.2			0.3			.5
8. Commander's Hand Station	6							0.1			0.3			.4
9. Position Interface Box	6							0.2			0.3			.5
10. Transmission	6							0.6			0.8			1.4
11. Turret Drive	6							<b>0.4</b>			0.6			1.0
12. Turret Drive Control Unit	6							<b>0.6</b>			0.8			1.4
13. IBAS	13							9.0	2.9		10.5	4.7		27.1
14. Termination Liability														
<b>Total Advance Procurement</b>								20.0	2.9		26.0	4.7		53.6
Description: *Number of months (Column 3) refers to integration of components, not to EOQ material.														

**Advance Procurement Requirements Analysis-Budget Justification (P-10B)**

Date: February 2000

Appropriation / Budget Activity/Serial No:  
PROCUREMENT OF WPNS & TRKD CMBT VEHS / 1 / Tracked Combat Vehicles

P-1 Line Item Nomenclature / Weapon System:  
BRADLEY BASE SUSTAINMENT (ADV PROC) (G80717)

(\$ in Millions)									
	PLT (mos)	Quantity Per Assembly	Unit Cost	2000			2001		
				Qty	Contract Forecast Date	Total Cost Request	Qty	Contract Forecast Date	Total Cost Request
Economic Order Quantity (EOQ)							109	Mar 01	
1. Vehicle	17	1	N/A					Mar 01	2.1
2. Flat Panel Display	6	2	N/A					Mar 01	0.8
3. Commander's Independent Viewer	12	1	N/A					Mar 01	4.0
4. POS/NAV	6	1	N/A					Mar 01	0.7
5. Turret Processing Unit	12	1	N/A					Mar 01	0.8
6. Hull Processing Unit	12	1	N/A					Mar 01	0.5
7. Gunner's Hand Station	6	1	N/A					Mar 01	0.2
8. Commander's Hand Station	6	1	N/A					Mar 01	0.1
9. Position Interface Box	6	1	N/A					Mar 01	0.2
10. Transmission	6	1	N/A					Mar 01	0.6
11. Turret Drive	6	1	N/A					Mar 01	0.4
12. Turret Drive Control Unit	6	1	N/A					Mar 01	0.6
13. IBAS	13	1	N/A					Mar 01	9.0
14. Termination Liability									
<b>Total Advance Procurement</b>									20.0

Description: Quantity and unit cost are not applicable. Funding is for EOQ material, not full up components.

**Advance Procurement Requirements Analysis-Present Value Analysis (P-10C)**

Date: February 2000

Appropriation / Budget Activity/Serial No:  
PROCUREMENT OF WPNS & TRKD CMBT VEHS / 1 / Tracked Combat Vehicles

P-1 Line Item Nomenclature / Weapon System:  
BRADLEY BASE SUSTAINMENT (ADV PROC) (G80717)

(\$ in Millions)												
	Pr Yrs	1997	1998	1999	2000	2001	2002	2003	2004	2005	To Comp	Total
<b>Proposal w/o AP</b>												
Then Year Cost						36673	156622	248221	276250	276768	891488	1886022
Constant Year Cost						35947	150990	234791	256190	251630	775333	1704881
Present Value						36189	150482	232236	251664	245493	745015	1661079
<b>AP Proposal</b>												
Then Year Cost						36141	148849	220097	234693	239968	781373	1661121
Constant Year Cost						35425	143497	208189	217651	218173	679609	1502544
Present Value						35664	143014	205923	213805	212852	653050	1464307
<b>AP Savings (Difference)</b>												
Then Year Cost						532	7773	28124	41557	36800	110115	224901
Constant Year Cost						521	7493	26602	38539	33458	95723	202338
Present Value						525	7468	26313	37858	32642	91966	196772

Remarks: There are currently no proposals; these are estimates.

Advance Procurement Requirements Analysis-Execution (P-10D)												Date: February 2000			
Appropriation / Budget Activity/Serial No: PROCUREMENT OF WPNS & TRKD CMBT VEHS / 1 / Tracked Combat Vehicles							P-1 Line Item Nomenclature / Weapon System: BRADLEY BASE SUSTAINMENT (ADV PROC) (G80717)								
(\$ in Millions)															
	PLT (mos)	1998					1999					2000		2001	
		Qty	Contract Forecast Date	Actual Contract Date	Total Cost Request	Actual Contract Cost	Qty	Contract Forecast Date	Actual Contract Date	Total Cost Request	Actual Contract Cost	Qty	Contract Forecast Date	Qty	Contract Forecast Date
End Item														109	Mar 01
1. Vehicle	17														Mar 01
2. Flat Panel Display	6														Mar 01
3. Commander's Independent Viewer	12														Mar 01
4. POS/NAV	6														Mar 01
5. Turret Processing Unit	12														Mar 01
6. Hull Processing Unit	12														Mar 01
7. Gunner's Hand Station	6														Mar 01
8. Commander's Hand Station	6														Mar 01
9. Position Interface Box	6														Mar 01
10. Transmission	6														Mar 01
11. Turret Drive	6														Mar 01
12. Turret Drive Control Unit	6														Mar 01
13. IBAS	13														Mar 01
<b>Total Advance Procurement</b>															
<p>Description:</p> <p>Planned advance procurement. No advance procurement history.</p>															

Advance Procurement Requirements Analysis-Obligations/Expenditures (P-10E)													Date: February 2000		
Appropriation / Budget Activity/Serial No: PROCUREMENT OF WPNS & TRKD CMBT VEHS / 1 / Tracked Combat Vehicles							P-1 Line Item Nomenclature / Weapon System: BRADLEY BASE SUSTAINMENT (ADV PROC) (G80717)								
(\$ in Millions)															
	Total Program	FY 00											Total Obl/Exp (Cum)	Ending Balance (Cum)	
		1999			2000										
		Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep		
<b>FY 98</b> PY Termination Liability Schedule															
PY Expenditures															
<b>FY 99</b> CY Termination Liability Schedule															
CY Expenditures															
<b>FY 00</b> Termination Liability Schedule															
<b>FY 01</b> Termination Liability Schedule															
Narrative: There is no termination liability within this advance procurement line. EOQ requirements were calculated based on a percentage of the bill of material cost and sub-contractor component cost.															

**Exhibit P-40, Budget Item Justification Sheet**

Date: February 2000

Appropriation / Budget Activity/Serial No: PROCUREMENT OF WPNS & TRKD CMBT VEHS / 1 / Tracked Combat Vehicles  
 P-1 Item Nomenclature: BRADLEY FVS TRAINING DEVICES (G20900)

Program Elements for Code B Items: Code: Other Related Program Elements:

	Prior Years	FY 1997	FY 1998	FY 1999	FY 2000	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	To Complete	Total Prog
Proc Qty												
Gross Cost	224.9	0.6	0.0	12.2	23.3	12.1	2.6	3.2	2.5	2.5	18.2	302.0
Less PY Adv Proc												
Plus CY Adv Proc												
Net Proc (P-1)	224.9	0.6	0.0	12.2	23.3	12.1	2.6	3.2	2.5	2.5	18.2	302.0
Initial Spares												
Total Proc Cost	224.9	0.6	0.0	12.2	23.3	12.1	2.6	3.2	2.5	2.5	18.2	302.0
Flyaway U/C												
Wpn Sys Proc U/C												

Description: The Bradley Advanced Training System (BATS) is a crew station simulator for the BFVS A3 turret. There are two configurations. One is used for precision gunnery training and comes with an Instructor/Operator's station and a remote monitoring station. The basis of issue for the gunnery version is one per mechanized infantry battalion and eight each at the USAARMS and USAIS. Total requirement is 32. The second configuration is maximized for use in the Close Combat Tactical Trainer (CCTT) simulation. The focus is on the unit level collective training in maneuver and command and control. In this configuration, BATS utilizes the Master Control Console from the CCTT and does not have the instructor/operator station. It does have drivers and squad compartments. Basis of issue for the maneuver version is 14 per installation equipped with BFVS A3s plus TRADOC requirements. Total requirement is 72.

Bradley Desktop Trainers (BDT) are computer workstations running the actual M2A3 software. It is equipped with touch-screen monitor, commander's handstation and data entry tool. This trainer facilitates the new equipment and sustainment training on the commander's tactical display and digital command and control software. Basis of issue is four per mechanized infantry battalion.

The M2A3 Maintenance Trainer will be used at the TRADOC installations to train the maintenance personnel. The system will consist of a Hands-on Turret Trainer (HOTT) and a computer workstation for classroom training. It is similar to the trainers in use for the Abrams tank system. Basis of issue is 8 HOTT and 32 workstations for US Army Armor School.

Justification: The M2A3 is a significant departure from the earlier versions of the Bradley. The digital architecture facilitates embedded test and diagnostics and enhances crew efficiency. As a result, the maintenance concept is radically different from the M2A2ODS. The vehicle fire control system and inherent crew duties are also significantly different. The increased cost of actual vehicle hardware mandates the increased use of Trng Aids, Devices and Simulators. The requirement for these devices is the result of a detailed training analysis and they are a key part of the Training Support Plan for the M2A3. Without these devices, additional vehicles would be required in TRADOC and additional OPTEMPO funding would be required for units.

<b>Exhibit P-5, Weapon WTCV Cost Analysis</b>		Appropriation/ Budget Activity/Serial No: PROCUREMENT OF WPNS & TRKD CMBT VEHS / 1 / Tracked Combat Vehicles			P-1 Line Item Nomenclature: BRADLEY FVS TRAINING DEVICES (G20900)			Weapon System Type:			Date: February 2000		
<b>Cost Elements</b>	ID CD	<b>FY 98</b>			<b>FY 99</b>			<b>FY 00</b>			<b>FY 01</b>		
		TotalCost \$000	Qty Each	UnitCost \$000	TotalCost \$000	Qty Each	UnitCost \$000	TotalCost \$000	Qty Each	UnitCost \$000	TotalCost \$000	Qty Each	UnitCost \$000
Production													
1. Bradley Advanced Training System (BATS)					12079	13	929	18097	14	1293	9000	8	1125
2. Bradley Desktop Trainer (BDT)					78	8	10	460	46	10			
3. Maintenance Trainers								4781	2	2391	3098	2	1549
<b>TOTAL</b>					<b>12157</b>			<b>23338</b>			<b>12098</b>		

## Exhibit P-5a, Budget Procurement History and Planning

Date:  
February 2000

Appropriation / Budget Activity/Serial No: PROCUREMENT OF WPNS & TRKD CMBT VEHS / 1 / Tracked Combat Vehicles		Weapon System Type:			P-1 Line Item Nomenclature: BRADLEY FVS TRAINING DEVICES (G20900)					
WBS Cost Elements: Fiscal Years	Contractor and Location	Contract Method and Type	Location of PCO	Award Date	Date of First Delivery	QTY Each	Unit Cost \$000	Specs Avail Now?	Date Revsn Avail	RFP Issue Date
<b>1. Bradley Advanced Training System (BATS)</b>										
FY 99	United Defense (LP)	SS FFP	TACOM	Jul-99	May-00	13	929	NA	NA	NA
FY 00	United Defense (LP)	FFP	TACOM	Jun-00	Apr-01	14	1293	NA	NA	NA
FY 01	United Defense (LP)	FFP	TACOM	Dec-00	Nov-01	8	1125	NA	NA	NA
<b>2. Bradley Desktop Trainer (BDT)</b>										
FY 99	United Defense (LP)	FFP	TACOM	Feb-00	May-00	8	10	NA	NA	NA
FY 00	United Defense (LP)	FFP	TACOM	Jun-00	Aug-00	46	10	NA	NA	NA
FY 01							VAR	NA	NA	NA
<b>3. Maintenance Trainers</b>										
FY 99										
FY 00	TBD	TBD	STRICOM-Orlando	Mar-00	May-01	2	2391	NA	NA	NA
FY 01	TBD	TBD	STRICOM-Orlando	Mar-01	May-02	2	1549	NA	NA	NA

REMARKS:







**Exhibit P-40, Budget Item Justification Sheet**

Date: February 2000

Appropriation / Budget Activity/Serial No: PROCUREMENT OF WPNS & TRKD CMBT VEHS / 1 / Tracked Combat Vehicles  
 P-1 Item Nomenclature: HAB TRAINING DEVICES (G84600)

Program Elements for Code B Items: Code: Other Related Program Elements:

	Prior Years	FY 1997	FY 1998	FY 1999	FY 2000	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	To Complete	Total Prog
Proc Qty												
Gross Cost	0.0	0.0	0.0	0.4	14.8	0.0	0.0	0.0	0.0	0.0	0.0	15.2
Less PY Adv Proc												
Plus CY Adv Proc												
Net Proc (P-1)	0.0	0.0	0.0	0.4	14.8	0.0	0.0	0.0	0.0	0.0	0.0	15.2
Initial Spares												
Total Proc Cost	0.0	0.0	0.0	0.4	14.8	0.0	0.0	0.0	0.0	0.0	0.0	15.2
Flyaway U/C												
Wpn Sys Proc U/C												

**DESCRIPTION:** The Wolverine (Heavy Assault Bridge) Training Aids, Devices, Simulators, and Simulations (TADSS) enables the total training capability that results in combat ready Engineer and Ordnance soldiers supporting the mounted maneuver force. Wolverine TADSS provides complete training capability for operators and maintainers employing or supporting the Wolverine system. Envisioned is support to the institutional, unit, and collective level. Wolverine TADSS program provides the development of a training strategy and supporting tools to train operators, leaders, and maintainers. The program fields TADSS at both the institution and Combat Training Center.

**JUSTIFICATION:** Wolverine TADSS optimizes unit, institutional and CTC training effectiveness, minimizing the Operation and Support (O&S) costs associated with on-vehicle training, as well as the environmental impact the result of actual vehicle operations.

The Wolverine program has been terminated. The decision to terminate the program was based on an assessment of affordability and acceptance of operational risk against higher Army Transformation priorities.

<b>Exhibit P-5, Weapon WTCV Cost Analysis</b>		Appropriation/ Budget Activity/Serial No: PROCUREMENT OF WPNS & TRKD CMBT VEHS / 1 / Tracked Combat Vehicles			P-1 Line Item Nomenclature: HAB TRAINING DEVICES (G84600)			Weapon System Type:			Date: February 2000		
<b>Cost Elements</b>	ID CD	<b>FY 98</b>			<b>FY 99</b>			<b>FY 00</b>			<b>FY 01</b>		
		TotalCost	Qty	UnitCost	TotalCost	Qty	UnitCost	TotalCost	Qty	UnitCost	TotalCost	Qty	UnitCost
		\$000	Each	\$000	\$000	Each	\$000	\$000	Each	\$000	\$000	Each	\$000
1. Project Management					385			342					
2. Program Closeout TBD								14502					
<b>TOTAL</b>					<b>385</b>			<b>14844</b>					
Note: FY00 program is being reassessed in light of the Army's transformation.													

**Exhibit P-40, Budget Item Justification Sheet**

Date: February 2000

Appropriation / Budget Activity/Serial No: PROCUREMENT OF WPNS & TRKD CMBT VEHS / 1 / Tracked Combat Vehicles  
 P-1 Item Nomenclature: BRADLEY FVS TRAINING DEVICES (MOD) (GZ2500)

Program Elements for Code B Items: Code: A Other Related Program Elements: 0203735A D371 Combat Vehicle Improvement Program

	Prior Years	FY 1997	FY 1998	FY 1999	FY 2000	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	To Complete	Total Prog
Proc Qty												
Gross Cost	10.4	0.8	0.0	2.5	4.3	14.0	1.6	4.4	0.0	0.0	0.0	38.0
Less PY Adv Proc												
Plus CY Adv Proc												
Net Proc (P-1)	10.4	0.8	0.0	2.5	4.3	14.0	1.6	4.4	0.0	0.0	0.0	38.0
Initial Spares												
Total Proc Cost	10.4	0.8	0.0	2.5	4.3	14.0	1.6	4.4	0.0	0.0	0.0	38.0
Flyaway U/C												
Wpn Sys Proc U/C												

**DESCRIPTION:**  
 Upgrades to the BFVS Training Devices are required every time the vehicle software changes. Current vehicle plans call for an annual software update. These changes will effect the functionality of the Bradley Advanced Training System (BATS), Bradley Desktop Trainer (BDT), Precision Gunnery System (PGS) and the M2A3 Maintenance Trainers.

1. The introduction of the A3 requires a modification kit for PGS to interface to the digital architecture. A total of 256 mod kits are required for the Active Army.
2. The Through Sight Video system also requires a mod kit to interface to the digital architecture on the M2A3. This mod kit is a redesigned cable harness that will be used on the existing video recording device. A total of 80 kits are required for the Active Army.
3. The UCOFT modifications are designed to replace out-of-date Computer and Image Generator hardware with state-of-the-art equipment. It will also include installation of the Applique computer system in order to completely match the vehicle. It is following the same program for Abrams UCOFTs. A total of 125 UCOFTS will be modified in both Active and Reserve Components. Part of the total requirement is funded by STRICOM through Operations and Support Cost savings. This will insure the UCOFT will remain a viable Training Device as long as the M2A2ODS is in the inventory.
4. Procurement of the Superelevation Switchbox will continue. This component enables the army standard MILES system to interface with the M2A2ODS.

Total BOIP is approximately 900 kits for those units equipped with the M2A2ODS.

**JUSTIFICATION:**  
 This program meets the requirements as stated in the Bradley Operational Requirements Document. A degradation of training will take place if these modifications are delayed or cancelled. Without satisfactory Training Devices, additional vehicles and increased OPTEMPO funding would be required.

**Exhibit P-40M Budget Item Justification Sheet**

Date  
February 2000

Appropriation / Budget Activity/Serial No.      P-1 Item Nomenclature  
 PROCUREMENT OF WPNS & TRKD CMBT VEHS / 1 / Tracked Combat Vehicles      BRADLEY FVS TRAINING DEVICES (MOD) (GZ2500)

Program Elements for Code B Items      Code      Other Related Program Elements

Description		Fiscal Years									
OSIP NO.	Classification	FY 1998	FY 1999	FY 2000	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	TC	Total
Software Upgrades											
1-96-05-4513	Operational	11.2	0.1	0.0	2.4	1.3	1.3	0.0	0.0	0.0	16.3
Precision Gunnery Ststem (PGS) Mods											
1-99-05-4565	Operational	0.0	1.4	0.5	6.1	0.0	0.0	0.0	0.0	0.0	8.0
Unit Conduct Of Fire Trainer (UCOFT) Mods											
1-99-05-4566	Operational	0.0	0.3	0.0	5.5	0.0	1.2	0.0	0.0	0.0	7.0
Through Sight Video System (TSV) Mods											
1-99-05-4567	Operational	0.0	0.1	0.4	0.0	0.3	0.6	0.0	0.0	0.0	1.4
Maintenance Trainer Mods											
1-99-05-4568	Operational	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
MILES Mods											
1-99-05-4569	Operational	0.0	0.7	3.4	0.0	0.0	1.3	0.0	0.0	0.0	5.4
Totals		11.2	2.5	4.3	14.0	1.6	4.4	0.0	0.0	0.0	38.0

**INDIVIDUAL MODIFICATION**

Date February 2000

**MODIFICATION TITLE:** Software Upgrades 1-96-05-4513

**MODELS OF SYSTEMS AFFECTED:** BFV COFTs, Precision Gunnery System, BATS, Bradley Desktop Trainer, Maintenance Training Systems.

**DESCRIPTION / JUSTIFICATION:**

**Description:**

Software updates will be required of training devices. As a system is upgraded/modified, software on the training device must be modified to ensure adequate training for the soldier. Planned upgrades include VIC 3 intercom adapter for existing Through Sight Video (TSV), Precision Gunnery System (PGS), MILES , UCFT, COFT Rehost, ODS Maintenance Trainer, and Reserve Component Equipment ODS Mods.

**DEVELOPMENT STATUS / MAJOR DEVELOPMENT MILESTONES:**

Preliminary Design Review	NA
Critical Design Review	NA
Contractor Test & Evaluation	NA
Initial Operational Test and Evaluation	NA
IPR Production Decision	NA
TDP Available	NA

**Installation Schedule:**

Pr Yr	FY 1999				FY 2000				FY 2001				FY 2002				FY 2003			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
<b>Totals</b>																				
<b>Inputs</b>																				
<b>Outputs</b>																				

  

	FY 2004				FY 2005				FY 2006				FY 2007				To Complete	Totals
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4		
<b>Inputs</b>																		
<b>Outputs</b>																		

**METHOD OF IMPLEMENTATION:** Contractor ADMINISTRATIVE LEADTIME: 12 Months PRODUCTION LEADTIME: 12 Months  
 Contract Dates: FY 1999 4Q99 FY 2000 1Q00 FY 2001 1Q01  
 Delivery Date: FY 1999 2Q00 FY 2000 1Q01 FY 2001 1Q02

INDIVIDUAL MODIFICATION

Date February 2000

MODIFICATION TITLE (Cont): Software Upgrades 1-96-05-4513

FINANCIAL PLAN: (\$ in Millions)

	FY 1998 and Prior		FY 1999		FY 2000		FY 2001		FY 2002		FY 2003		FY 2004		FY 2005		TC		TOTAL		
	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	
RDT&E																					
PROCUREMENT																					
Software Mods -A2		11.2																			11.2
Software Mods -A3				0.1				2.4		1.3		1.3									5.1
Installation of Hardware																					
FY 1998 & Prior Eqpt -- Kits																					
FY 1999 Eqpt -- Kits																					
FY 2000 Eqpt -- Kits																					
FY 2001 Eqpt -- Kits																					
FY 2002 Eqpt -- kits																					
FY 2003 Eqpt -- kits																					
FY 2004 Eqpt -- kits																					
FY 2005 Eqpt -- kits																					
TC Equip-Kits																					
Total Installment																					
Total Procurement Cost		11.2		0.1				2.4		1.3		1.3									16.3

**INDIVIDUAL MODIFICATION**

Date February 2000

**MODIFICATION TITLE:** Precision Gunnery System (PGS) Mods 1-99-05-4565

**MODELS OF SYSTEMS AFFECTED:** BFV Precision Gunnery System

**DESCRIPTION / JUSTIFICATION:**

The introduction of the A3 requires a modification kit for PGS to interface to the digital architecture. A total of 256 mod kits are required for the Active Army.

**DEVELOPMENT STATUS / MAJOR DEVELOPMENT MILESTONES:**

Preliminary Design Review	NA
Critical Design Review	NA
Contractor Test & Evaluation	NA
Initial Operational Test and Evaluation	NA
IPR Production Decision	NA
TDP Available	NA

**Installation Schedule:**

Pr Yr	FY 1999				FY 2000				FY 2001				FY 2002				FY 2003			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
<b>Totals</b>									7	7	7	7	25	25	25	25				
<b>Inputs</b>									7	7	7	7	25	25	25	25				
<b>Outputs</b>									7	7	7	7	25	25	25	25				

  

	FY 2004				FY 2005				FY 2006				FY 2007				To Complete	Totals								
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4										
<b>Inputs</b>																										
<b>Outputs</b>																										

**METHOD OF IMPLEMENTATION:** Contractor ADMINISTRATIVE LEADTIME: 11 Months PRODUCTION LEADTIME: 12 Months

Contract Dates: FY 1999 Aug 99 FY 2000 Dec 00 FY 2001 NA

Delivery Date: FY 1999 Aug 00 FY 2000 Jul 01 FY 2001 NA

INDIVIDUAL MODIFICATION

Date February 2000

MODIFICATION TITLE (Cont): Precision Gunnery System (PGS) Mods 1-99-05-4565

FINANCIAL PLAN: (\$ in Millions)

	FY 1998 and Prior		FY 1999		FY 2000		FY 2001		FY 2002		FY 2003		FY 2004		FY 2005		TC		TOTAL		
	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	
RDT&E																					
PROCUREMENT																					
Kit Quantity																					
Installation Kits			28	1.4	0		228	6.1												256	7.5
Installation Kits, Nonrecurring Equipment																					
Equipment, Nonrecurring																					
Engineering Change Orders																					
Data																					
Training Equipment																					
Support Equipment																					
Other																					
Interim Contractor Support						0.5															0.5
NOTE: Application costs are included in procurement unit cost																					
Installation of Hardware																					
FY 1998 & Prior Eqpt -- Kits																					
FY 1999 Eqpt -- Kits																					
FY 2000 Eqpt -- Kits																					
FY 2001 Eqpt -- Kits																					
FY 2002 Eqpt -- kits																					
FY 2003 Eqpt -- kits																					
FY 2004 Eqpt -- kits																					
FY 2005 Eqpt -- kits																					
TC Equip-Kits																					
Total Installment																					
Total Procurement Cost				1.4		0.5		6.1													8.0

**INDIVIDUAL MODIFICATION**

Date February 2000

**MODIFICATION TITLE:** UniT Conduct Of Fire Trainer (UCOFT) Mods 1-99-05-4566

**MODELS OF SYSTEMS AFFECTED:** UCOFT, COFT

**DESCRIPTION / JUSTIFICATION:**

The UCOFT modifications are designed to replace out-of-date Computer and Image Generator hardware with state-of-the-art equipment. It will also include installation of the Applique computer system in order to completely match the vehicle. It is following the same program for Abrams UCOFTs. A total of 125 UCOFTs will be modified in both Active and Reserve Components. Part of the total requirement is funded by STRICOM through Operations and Support Cost savings. This will insure the UCOFT will remain a viable Training Device as long as the M2A2ODS is in the inventory.

**DEVELOPMENT STATUS / MAJOR DEVELOPMENT MILESTONES:**

Preliminary Design Review	NA
Critical Design Review	NA
Contractor Test & Evaluation	NA
Initial Operational Test and Evaluation	NA
IPR Production Decision	NA
TDP Available	NA

**Installation Schedule:**

Pr Yr	FY 1999				FY 2000				FY 2001				FY 2002				FY 2003			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
<b>Totals</b>																				
<b>Inputs</b>								10									9	10	5	
<b>Outputs</b>								10									9	10	5	

  

	FY 2004				FY 2005				FY 2006				FY 2007				To Complete	Totals		
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4				
<b>Inputs</b>				5																39
<b>Outputs</b>				5																39

**METHOD OF IMPLEMENTATION:** Contractor ADMINISTRATIVE LEADTIME: 9 Months PRODUCTION LEADTIME: 12 Months

Contract Dates: FY 1999 Jul 99 FY 2000 NA FY 2001 Jul 01

Delivery Date: FY 1999 Jul 00 FY 2000 NA FY 2001 Jul 02

INDIVIDUAL MODIFICATION

Date February 2000

MODIFICATION TITLE (Cont): UniT Conduct Of Fire Trainer (UCOFT) Mods 1-99-05-4566

FINANCIAL PLAN: (\$ in Millions)

	FY 1998 and Prior		FY 1999		FY 2000		FY 2001		FY 2002		FY 2003		FY 2004		FY 2005		TC		TOTAL		
	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	
RDT&E																					
PROCUREMENT																					
Kit Quantity																					
UCOFT			10	0.3							5	1.2							15	1.5	
COFT Rehost							10	2.5											10	2.5	
RSRV Comp. Equipt ODS Mods							14	3.0											14	3.0	
Equipment, Nonrecurring																					
Engineering Change Orders																					
Data																					
Training Equipment																					
Support Equipment																					
Other																					
Interim Contractor Support																					
NOTE: Application costs are included in procurement unit cost																					
Installation of Hardware																					
FY 1998 & Prior Eqpt -- Kits																					
FY 1999 Eqpt -- Kits																					
FY 2000 Eqpt -- Kits																					
FY 2001 Eqpt -- Kits																					
FY 2002 Eqpt -- kits																					
FY 2003 Eqpt -- kits																					
FY 2004 Eqpt -- kits																					
FY 2005 Eqpt -- kits																					
TC Equip-Kits																					
Total Installment																					
Total Procurement Cost				0.3				5.5				1.2									7.0

**INDIVIDUAL MODIFICATION**

Date February 2000

**MODIFICATION TITLE:** Through Sight Video System (TSV) Mods 1-99-05-4567

**MODELS OF SYSTEMS AFFECTED:** BFVS TSV.

**DESCRIPTION / JUSTIFICATION:**

The Through Sight Video system also requires a mod kit to interface to the digital architecture on the M2A3. This mod kit is a redesigned cable harness that will be used on the existing video recording device.

**DEVELOPMENT STATUS / MAJOR DEVELOPMENT MILESTONES:**

Preliminary Design Review	NA
Critical Design Review	NA
Contractor Test & Evaluation	NA
Initial Operational Test and Evaluation	NA
IPR Production Decision	NA
TDP Available	NA

**Installation Schedule:**

Pr Yr	FY 1999				FY 2000				FY 2001				FY 2002				FY 2003			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
<b>Totals</b>																	4	12	12	12
<b>Inputs</b>																	4	12	12	12
<b>Outputs</b>																	4	12	12	12

  

	FY 2004				FY 2005				FY 2006				FY 2007				To Complete	Totals		
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4				
<b>Inputs</b>	13	13	17	18	9															110
<b>Outputs</b>	13	13	17	18	9															110

**METHOD OF IMPLEMENTATION:** Contractor ADMINISTRATIVE LEADTIME: 6 Months PRODUCTION LEADTIME: 6 Months

Contract Dates: FY 1999 Aug 99 FY 2000 Mar 00 FY 2001 Mar 01

Delivery Date: FY 1999 NA FY 2000 Mar 01 FY 2001 Mar 02

INDIVIDUAL MODIFICATION

Date

February 2000

MODIFICATION TITLE (Cont): Through Sight Video System (TSV) Mods 1-99-05-4567

FINANCIAL PLAN: (\$ in Millions)

	FY 1998 and Prior		FY 1999		FY 2000		FY 2001		FY 2002		FY 2003		FY 2004		FY 2005		TC		TOTAL		
	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	
RDT&E																					
PROCUREMENT																					
Kit Quantity					15	0.4	0		25	0.3	70	0.6							110	1.3	
Installation Kits																					
Installation Kits, Nonrecurring																					
Equipment																					
Equipment, Nonrecurring																					
Engineering Change Orders																					
Data				0.1																	0.1
Training Equipment																					
Support Equipment																					
Other																					
Interim Contractor Support																					
NOTE: Application costs are included in procurement unit cost																					
Installation of Hardware																					
FY 1998 & Prior Eqpt -- Kits																					
FY 1999 Eqpt -- Kits																					
FY 2000 Eqpt -- Kits																					
FY 2001 Eqpt -- Kits																					
FY 2002 Eqpt -- kits																					
FY 2003 Eqpt -- kits																					
FY 2004 Eqpt -- kits																					
FY 2005 Eqpt -- kits																					
TC Equip-Kits																					
Total Installment																					
Total Procurement Cost				0.1		0.4				0.3		0.6									1.4

**INDIVIDUAL MODIFICATION**

Date February 2000

MODIFICATION TITLE:  
MODELS OF SYSTEMS AFFECTED:

DESCRIPTION / JUSTIFICATION:

DEVELOPMENT STATUS / MAJOR DEVELOPMENT MILESTONES:

Preliminary Design Review	NA
Critical Design Review	NA
Contractor Test & Evaluation	NA
Initial Operational Test and Evaluation	NA
IPR Production Decision	NA
TDP Available	NA

Installation Schedule:

Pr Yr	FY 1999				FY 2000				FY 2001				FY 2002				FY 2003			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
<b>Totals</b>																				
<b>Inputs</b>																				
<b>Outputs</b>																				

  

	FY 2004				FY 2005				FY 2006				FY 2007				To Complete	Totals
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4		
<b>Inputs</b>																		
<b>Outputs</b>																		

METHOD OF IMPLEMENTATION:	Contractor	ADMINISTRATIVE LEADTIME:	6 Months	PRODUCTION LEADTIME:	12 Months
Contract Dates:	FY 1999 Enter Date	FY 2000 Enter Date	FY 2001 Mar 01		
Delivery Date:	FY 1999 Enter Date	FY 2000 Enter Date	FY 2001 Mar 02		

INDIVIDUAL MODIFICATION

Date

February 2000

MODIFICATION TITLE (Cont):

FINANCIAL PLAN: (\$ in Millions)

	FY 1998 and Prior		FY 1999		FY 2000		FY 2001		FY 2002		FY 2003		FY 2004		FY 2005		TC		TOTAL		
	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	
RDT&E																					
PROCUREMENT																					
Kit Quantity																					
Installation Kits																					
Installation Kits, Nonrecurring																					
Equipment																					
Equipment, Nonrecurring																					
Engineering Change Orders																					
Data																					
Training Equipment																					
Support Equipment																					
Other																					
Interim Contractor Support																					
NOTE: Application costs are included in procurement unit cost																					
Installation of Hardware																					
FY 1998 & Prior Eqpt -- Kits																					
FY 1999 Eqpt -- Kits																					
FY 2000 Eqpt -- Kits																					
FY 2001 Eqpt -- Kits																					
FY 2002 Eqpt -- kits																					
FY 2003 Eqpt -- kits																					
FY 2004 Eqpt -- kits																					
FY 2005 Eqpt -- kits																					
TC Equip-Kits																					
Total Installment																					
Total Procurement Cost																					

**INDIVIDUAL MODIFICATION**

Date February 2000

**MODIFICATION TITLE:** MILES Mods 1-99-05-4569

**MODELS OF SYSTEMS AFFECTED:** BFVS MILES

**DESCRIPTION / JUSTIFICATION:**

Procurement of the Superelevation Switchbox will continue. This component enables the army standard MILES system to interface with the M2A2ODS. Total BOIP is approximately 900 kits for those units equipped with the M2A2ODS.

The BFVS SAWE/MILES hardware at the National Training Center must be modified to operate on the M2A3. Initial funding in FY00 provides minimum quantity to support the division Capstone Exercise - DCS by Jan 01. Funding in FY03 will procure an additional 65 mod kits.

**DEVELOPMENT STATUS / MAJOR DEVELOPMENT MILESTONES:**

Preliminary Design Review	NA
Critical Design Review	NA
Contractor Test & Evaluation	NA
Initial Operational Test and Evaluation	NA
IPR Production Decision	NA
TDP Available	NA

**Installation Schedule:**

Pr Yr	FY 1999				FY 2000				FY 2001				FY 2002				FY 2003			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
<b>Totals</b>							50	50	50	50	112	112	113	113						
<b>Inputs</b>							50	50	50	50	112	112	113	113						
<b>Outputs</b>							50	50	50	50	112	112	113	113						

  

	FY 2004				FY 2005				FY 2006				FY 2007				To Complete	Totals			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4					
<b>Inputs</b>		30	35	35	18																768
<b>Outputs</b>		30	35	35	18																768

**METHOD OF IMPLEMENTATION:** Contractor ADMINISTRATIVE LEADTIME: 14 Months PRODUCTION LEADTIME: 6 Months

Contract Dates: FY 1999 Nov 99 FY 2000 Nov 00 FY 2001 Nov 01

Delivery Date: FY 1999 May 00 FY 2000 May 01 FY 2001 May 02

INDIVIDUAL MODIFICATION

Date February 2000

MODIFICATION TITLE (Cont): MILES Mods 1-99-05-4569

FINANCIAL PLAN: (\$ in Millions)

	FY 1998 and Prior		FY 1999		FY 2000		FY 2001		FY 2002		FY 2003		FY 2004		FY 2005		TC		TOTAL		
	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	
RDT&E																					
PROCUREMENT																					
MILES Superelevation box			120	0.2	300	0.3														420	0.5
MILES VIS Adapter			80	0.1	150	0.1														230	0.2
MILES TOW Bracket				0.4																	0.4
SAWE/MILES					53	3.0					65	1.3								118	4.3
Equipment																					
Equipment, Nonrecurring																					
Engineering Change Orders																					
Data																					
Training Equipment																					
Support Equipment																					
Other																					
Interim Contractor Support																					
NOTE: Application costs are included in procurement unit cost																					
Installation of Hardware																					
FY 1998 & Prior Eqpt -- Kits																					
FY 1999 Eqpt -- Kits																					
FY 2000 Eqpt -- Kits																					
FY 2001 Eqpt -- Kits																					
FY 2002 Eqpt -- kits																					
FY 2003 Eqpt -- kits																					
FY 2004 Eqpt -- kits																					
FY 2005 Eqpt -- kits																					
TC Equip-Kits																					
Total Installment																					
Total Procurement Cost				0.7		3.4						1.3									5.4

**Exhibit P-40, Budget Item Justification Sheet**

Date: February 2000

Appropriation / Budget Activity/Serial No: PROCUREMENT OF WPNS & TRKD CMBT VEHS / 1 / Tracked Combat Vehicles  
 P-1 Item Nomenclature: ABRAMS TANK TRAINING DEVICES (GB1300)

Program Elements for Code B Items: Code: Other Related Program Elements:

	Prior Years	FY 1997	FY 1998	FY 1999	FY 2000	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	To Complete	Total Prog
Proc Qty												
Gross Cost	45.8	12.5	13.1	13.3	8.1	10.5	11.7	12.0	12.9	5.8		145.7
Less PY Adv Proc												
Plus CY Adv Proc												
Net Proc (P-1)	45.8	12.5	13.1	13.3	8.1	10.5	11.7	12.0	12.9	5.8		145.7
Initial Spares												
Total Proc Cost	45.8	12.5	13.1	13.3	8.1	10.5	11.7	12.0	12.9	5.8		145.7
Flyaway U/C												
Wpn Sys Proc U/C												

**DESCRIPTION:** The family of M1A2 Training Aids, Devices, Simulators and Simulations (TADSS) will replicate actual tank performance without incurring the much higher costs of operating the tank itself.

- Advance Gunnery Training System (AGTS) - These are precision gunnery trainers which provide realistic commander and gunner training under varying scenarios.
- Maintenance Trainers - These systems provide training in essential unit and direct support/general support tasks. There are four different trainers: M1A2 Hands-on-Trainer (HOT); Hull Electrical Diagnostic/Troubleshooting (D/T) Trainer; Turret/Fire Control D/T Trainer; and Direct Support Electrical System Test Set Line Replaceable Unit (DSESTS LRU) simulators. The students (approximately 600/yr) will learn about the sub-systems and procedures for troubleshooting and fault isolating the tank system. The intended sites are Ft. Knox and Aberdeen Proving Grounds.
- SEP Integration - This funding provides for integration of SEP improvements into the various training devices impacted by those changes on the tank.

**JUSTIFICATION:** Fielding of the M1A2 Main Battle Tank requires concurrent fielding of a training support package. It is not cost effective to provide effective, realistic training on the M1A2 tanks through the operational use of the vehicle. Realistic training on a family of training devices simply makes better economic sense.

<b>Exhibit P-5, Weapon WTCV Cost Analysis</b>		Appropriation/ Budget Activity/Serial No: PROCUREMENT OF WPNS & TRKD CMBT VEHS / 1 / Tracked Combat Vehicles			P-1 Line Item Nomenclature: ABRAMS TANK TRAINING DEVICES (GB1300)			Weapon System Type:			Date: February 2000		
Cost Elements	ID CD	FY 98			FY 99			FY 00			FY 01		
		TotalCost	Qty	UnitCost	TotalCost	Qty	UnitCost	TotalCost	Qty	UnitCost	TotalCost	Qty	UnitCost
		\$000	Each	\$000	\$000	Each	\$000	\$000	Each	\$000	\$000	Each	\$000
Advance Gunnery Training System (AGTS)	A												
1) Production					8800			1811			8724		
2) Government Support					324			500			500		
3) First Article Test					300								
4) Non Recurring Cost													
<b>SUBTOTAL</b>					<b>9424</b>	<b>8</b>	<b>1178</b>	<b>2311</b>	<b>2</b>	<b>1156</b>	<b>9224</b>	<b>9</b>	<b>1025</b>
M1A2 Maintenance Trainers	A												
1) Production								1950					
2) Government Support								100					
3) First Article Test													
4) Non Recurring Cost					150			100					
<b>SUBTOTAL</b>					<b>150</b>			<b>2150</b>	<b>2</b>	<b>1075</b>			
M1A2 Non System Integration Kits	A												
1) Production					960								
2) Government Support					100			502					
3) First Article Test													
4) Non Recurring Cost					2								
<b>SUBTOTAL</b>					<b>1062</b>			<b>502</b>	<b>VAR</b>	<b>VAR</b>			
M1A2 Software Upgrades	A												
1) Production													
2) Government Support					59			100			100		
3) First Article Test													
4) Non Recurring Cost					603			487			780		
<b>SUBTOTAL</b>					<b>662</b>	<b>VAR</b>	<b>VAR</b>	<b>587</b>	<b>VAR</b>	<b>VAR</b>	<b>880</b>	<b>VAR</b>	<b>VAR</b>
SEP Integration	A												
1) Production					1850			2400			350		
2) Government Support					50			100			50		
3) First Article Test					100								
4) Non Recurring Cost													
<b>SUBTOTAL</b>					<b>2000</b>	<b>VAR</b>	<b>VAR</b>	<b>2500</b>	<b>VAR</b>	<b>VAR</b>	<b>400</b>	<b>VAR</b>	<b>VAR</b>
<b>TOTAL</b>					<b>13298</b>			<b>8050</b>			<b>10504</b>		

## Exhibit P-5a, Budget Procurement History and Planning

Date:  
February 2000

Appropriation / Budget Activity/Serial No: PROCUREMENT OF WPNS & TRKD CMBT VEHS / 1 / Tracked Combat Vehicles				Weapon System Type:			P-1 Line Item Nomenclature: ABRAMS TANK TRAINING DEVICES (GB1300)				
WBS Cost Elements: Fiscal Years	Contractor and Location	Contract Method and Type	Location of PCO	Award Date	Date of First Delivery	QTY Each	Unit Cost \$000	Specs Avail Now?	Date Revsn Avail	RFP Issue Date	
<b>Advance Gunnery Training System (AGTS)</b>											
FY99	Lockheed Martin, Orlando, FL	C-FFP	STRICOM	Nov-98	Oct-00	8	1178	Yes	No	N/A	
FY00	Lockheed Martin, Orlando, FL	C-FFP	STRICOM	Nov-99	Oct-01	2	1156	Yes	No	N/A	
FY01	Lockheed Martin, Orlando, FL	C-FFP	STRICOM	Mar-01	Mar-03	9	1025	Yes	No	N/A	
<b>M1A2 Maintenance Trainers</b>											
FY00	Research Triangle Institute (RTI), Charlotte, NC	C-FFP	STRICOM	Dec-99	Oct-00	2	1075	Yes	No	N/A	
<b>M1A2 Non System Integration Kits 1/</b>											
FY99	Various	C-FFP	STRICOM	Aug-99	Nov-99	VAR	VAR	No	No	N/A	
FY00	Various	C-FFP	STRICOM	Mar-00	Jun-01	VAR	VAR	No	No	N/A	
<b>M1A2 Software Upgrades 2/</b>											
FY99	Various	C-FFP	STRICOM	Mar-99	Mar-00	VAR	VAR	No	No	N/A	
FY00	Various	C-FFP	STRICOM	Mar-00	Mar-01	VAR	VAR	No	No	N/A	
FY01	Various	C-FFP	STRICOM	Mar-01	Mar-02	VAR	VAR	No	No	N/A	
<b>SEP Integration</b>											
FY99	Lockheed Martin, Orlando, FL	C-FFP	STRICOM	Feb-99	Mar-00	VAR	VAR	No	No	N/A	
FY00	Lockheed Martin, Orlando, FL	C-FFP	STRICOM	Feb-00	Mar-01	VAR	VAR	No	No	N/A	
FY01	Various	C-FFP	STRICOM	Feb-01	Mar-02	VAR	VAR	No	No	N/A	

**REMARKS:** 1/ M1A2 Non-System Integration Kits provide system unique kits allowing the installation of Non-System Training Devices, such as Thru Sight Video (TSV), Tank Weapon Gun Simulation System (TWGSS), Precision Range Integrated Maneuver Exercise (PRIME), and Multiple Integrated Laser Engagement System (MILES) onto the M1A2 tank.

2/ M1A2 trainer software upgrades update M1A2 training devices to keep pace with changes in the M1A2 tank.







**Exhibit P-40, Budget Item Justification Sheet**

Date: February 2000

Appropriation / Budget Activity/Serial No: PROCUREMENT OF WPNS & TRKD CMBT VEHS / 1 / Tracked Combat Vehicles  
 P-1 Item Nomenclature: MEDIUM ARMORED VEHICLE FAMILY (G85100)

Program Elements for Code B Items: Code: Other Related Program Elements:

	Prior Years	FY 1997	FY 1998	FY 1999	FY 2000	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	To Complete	Total Prog
Proc Qty												
Gross Cost	0.0	0.0	0.0	0.0	TBD	537.1	1007.2	898.1	853.4	1036.6	0.0	4332.4
Less PY Adv Proc												
Plus CY Adv Proc												
Net Proc (P-1)	0.0	0.0	0.0	0.0	TBD	537.1	1007.2	898.1	853.4	1036.6	0.0	4332.4
Initial Spares												
Total Proc Cost	0.0	0.0	0.0	0.0	TBD	537.1	1007.2	898.1	853.4	1036.6	0.0	4332.4
Flyaway U/C												
Wpn Sys Proc U/C												

**DESCRIPTION:** The Brigade Combat Team (BCT), equipped with Medium Armored Vehicles (MAVs), is a full spectrum combat force. It has utility in all operational environments. It will be employed as part of a division. It can be used across the spectrum of military operations. The Brigade Combat Team deploys rapidly and conducts effective combat operations immediately on arrival to prevent, contain, stabilize, or resolve a conflict through shaping and decisive operations. Variants within the Family of Medium Armored Vehicle (MAVs) are:

**Infantry Carrier Vehicle:** The Infantry Carrier Vehicle (ICV) provides protected transport and supporting fires for the infantry squad during dismounted assault. The ICV carries an infantry squad with individual equipment.

**Mobile Gun System:** The Mobile Gun System (MGS) supports dismounted infantry and engages the enemy in close combat in order to clear opposition and permit rapid movement allowing the force to maintain the initiative, occupy and/or secure key objectives, and defeat strong points.

**Reconnaissance Vehicle:** The Reconnaissance Vehicle provides force situational awareness, gathering and transmitting real time intelligence while moving throughout the battlefield in close, complex and urban terrain.

**Antitank Guided Missile Vehicle:** The Antitank Guided Missile Vehicle (ATGM) is the brigade's primary tank killing system. The ATGM reinforces the brigade's infantry battalions, reinforces the brigade reconnaissance squadron, and provides long-range direct fires.

**Command and Control/TOC Vehicle:** The Command and Control/TOC vehicle provides the brigade with the means to receive information and data, analyze, prepare and transmit data, and control the forces/functions carrying out combat missions.

<b>Exhibit P-40C Budget Item Justification Sheet</b>		Date February 2000
Appropriation / Budget Activity/Serial No. PROCUREMENT OF WPNS & TRKD CMBT VEHS / 1 / Tracked Combat Vehicles		P-1 Item Nomenclature MEDIUM ARMORED VEHICLE FAMILY (G85100)
Program Elements for Code B Items	Code	Other Related Program Elements
<p><b>Mortar Carrier:</b> The Mortar Carrier will support infantry units with screening obscurants, suppressive forces and on-call supporting fires. 120mm and 81mm mortar carrier variants provide complimentary capabilities with responsive, accurate and lethal indirect fire support to the dismounted infantry assault.</p> <p><b>Self-Propelled Howitzer:</b> The Self-Propelled Howitzer provides indirect fire support capabilities beyond what can be ranged by the Mortar Carrier. It provides pro-active counterfire for the brigade.</p> <p><b>Engineer Vehicle:</b> The Engineer Vehicle (EV) provides maneuver/mobility support capabilities which include obstacle clearing, in-stride breaching of surface mines, proofing of subsurface mines, and smoke generation for local protection.</p> <p><b>Striker/Fire Support Team Vehicle:</b> The Striker/Fire Support Team Vehicle provides automated enhanced surveillance, target acquisition, target identification, target tracking, target designation, position location, and communications functionality. Targets will be transmitted instantly to the fire support system and shooter.</p> <p><b>NBC Reconnaissance Vehicle:</b> The Nuclear, Biological, Chemical (NBC) Reconnaissance Vehicle provides on the move and remote near-real-time nuclear, biological and chemical detection and surveillance to supply battlefield visualization of NBC hazards.</p> <p><b>Medical Evacuation/Medical Treatment Vehicle:</b> The Medical Evaluation/Medical Treatment Vehicle is the Battalion Aid Station for brigade units, providing critical treatment for serious injury and advanced trauma cases.</p> <p><b>JUSTIFICATION:</b> FY01 funds support the procurement of one Brigade Combat Team (BCT) equipped with Medium Armored Vehicles. An immediate need exists for a Medium Armored Vehicle (MAV) equipped C-130 transportable Brigade Combat Team (BCT), capable of deployment to anywhere on the globe in a combat ready configuration. A dynamic asymmetric threat and operational environment demands full spectrum, strategically responsive, agile and dominant land forces. Immediate response by a lethal, versatile, tactically agile joint force capable of operational maneuver once in the Area of Operations is essential to fulfilling the Warfighting needs of the National Command Authority. The MAV-equipped BCT is this force. The use of a common platform/common chassis design reduces requirements for repair parts and logistics support in the area of operations.</p>		

<b>Exhibit P-5, Weapon WTCV Cost Analysis</b>		Appropriation/ Budget Activity/Serial No: PROCUREMENT OF WPNS & TRKD CMBT VEHS / 1 / Tracked Combat Vehicles			P-1 Line Item Nomenclature: MEDIUM ARMORED VEHICLE FAMILY (G85100)			Weapon System Type:			Date: February 2000		
<b>Cost Elements</b>	ID CD	<b>FY 98</b>			<b>FY 99</b>			<b>FY 00</b>			<b>FY 01</b>		
		TotalCost	Qty	UnitCost	TotalCost	Qty	UnitCost	TotalCost	Qty	UnitCost	TotalCost	Qty	UnitCost
		\$000	Each	\$000	\$000	Each	\$000	\$000	Each	\$000	\$000	Each	\$000
1. Medium Armored Vehicle Family Vehicles								TBD	TBD	TBD	516300	TBD	TBD
2. Program Management Support								TBD			20800		
<b>TOTAL</b>											<b>537100</b>		

## Exhibit P-5a, Budget Procurement History and Planning

Date:  
February 2000

Appropriation / Budget Activity/Serial No: PROCUREMENT OF WPNS & TRKD CMBT VEHS / 1 / Tracked Combat Vehicles		Weapon System Type:			P-1 Line Item Nomenclature: MEDIUM ARMORED VEHICLE FAMILY (G85100)					
WBS Cost Elements: Fiscal Years	Contractor and Location	Contract Method and Type	Location of PCO	Award Date	Date of First Delivery	QTY Each	Unit Cost \$000	Specs Avail Now?	Date Revsn Avail	RFP Issue Date
1. Medium Armored Vehicle Family Vehicles	TBS	TBD	TACOM	Jul-00	TBD	TBD	TBD	NA	NA	Mar 00

REMARKS:

**Exhibit P-40, Budget Item Justification Sheet**

Date: February 2000

Appropriation / Budget Activity/Serial No: PROCUREMENT OF WPNS & TRKD CMBT VEHS / 1 / Tracked Combat Vehicles  
 P-1 Item Nomenclature: COMMAND & CONTROL VEHICLE (G84200)

Program Elements for Code B Items: Code: A Other Related Program Elements: PE 0604640A Advanced Command and Control Vehicle

	Prior Years	FY 1997	FY 1998	FY 1999	FY 2000	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	To Complete	Total Prog
Proc Qty		5	5	10								20
Gross Cost	0.0	48.8	29.6	47.7	61.4							187.5
Less PY Adv Proc												
Plus CY Adv Proc												
	0.0	48.8	29.6	47.7	61.4							187.5
Initial Spares			0.9	2.5	2.6							5.9
Total Proc Cost	0.0	48.8	30.5	50.2	64.0	0.0	0.0	0.0	0.0	0.0	0.0	193.4
Flyaway U/C												
Wpn Sys Proc U/C		9.8	6.1	5.0								9.7

**DESCRIPTION:** The Command and Control Vehicle (C2V) provides a fully tracked, armored vehicle based on Bradley A2 and MLRS designs and components. C2V was developed in response to lessons learned during Operation Desert Storm. It supports the Army heavy force Digitization Effort, incorporating communications and electronic systems compatible with Army Tactical Command and Control systems (ATCCS). It provides a mobile, responsive, and survivable command and control capability to the heavy force, and the platform to support command and control on the move.

The program is terminated to support the Army's transformation. The FY00 program is being reassessed in light of the transformation initiative.

**JUSTIFICATION:** This program was initiated as a result of deficiencies in existing command and control vehicles identified during Operation Desert Storm.

<b>Exhibit P-5, Weapon WTCV Cost Analysis</b>		Appropriation/ Budget Activity/Serial No: PROCUREMENT OF WPNS & TRKD CMBT VEHS / 1 / Tracked Combat Vehicles			P-1 Line Item Nomenclature: COMMAND & CONTROL VEHICLE (G84200)			Weapon System Type:			Date: February 2000		
<b>Cost Elements</b>	ID CD	<b>FY 98</b>			<b>FY 99</b>			<b>FY 00</b>			<b>FY 01</b>		
		TotalCost	Qty	UnitCost	TotalCost	Qty	UnitCost	TotalCost	Qty	UnitCost	TotalCost	Qty	UnitCost
		\$000	Each	\$000	\$000	Each	\$000	\$000	Each	\$000	\$000	Each	\$000
1 Vehicle					18320	10	1832	26153	12	2179			
2 Transmission					1486	10	149	1800	12	150			
3 Other GFE					403	10	40	512	12	43			
4 Mission Module Components					5252	18	292						
<b>SUBTOTAL</b>					<b>25461</b>			<b>28465</b>					
5 Tooling/Other Non-Recurring								1828					
6 FAT/Qual of Vendors													
<b>SUBTOTAL</b>								<b>1828</b>					
7 Test					632			2161					
8 Engr Govt					2088			2109					
9 Engr Cntr					10462			19261					
10 Proj Mgt Admin					650			657					
11 Reimbursable Matrix					368			466					
12 Software Support					448			452					
13 Logistics					3603			6043					
14 TMDE					4000								
<b>TOTAL</b>					<b>47712</b>			<b>61442</b>					

## Exhibit P-5a, Budget Procurement History and Planning

Date:  
February 2000

Appropriation / Budget Activity/Serial No: PROCUREMENT OF WPNS & TRKD CMBT VEHS / 1 / Tracked Combat Vehicles		Weapon System Type:			P-1 Line Item Nomenclature: COMMAND & CONTROL VEHICLE (G84200)					
WBS Cost Elements: Fiscal Years	Contractor and Location	Contract Method and Type	Location of PCO	Award Date	Date of First Delivery	QTY Each	Unit Cost \$000	Specs Avail Now?	Date Revsn Avail	RFP Issue Date
1 Vehicle										
FY 99	UDLP, York, PA	SS/FFP	TACOM	Dec -98	Jun-00	10	1832			
FY 00	UDLP, York, PA	SS/FFP	TACOM	TBD *	TBD *	12	2179			
2 Transmission										
FY 99	GDLS, Muskegon, MI	SS/FFP	TACOM	Mar-99	Apr-00	10	149			
FY 00	GDLS, Muskegon, MI	SS/FFP	TACOM	TBD *	TBD *	12	150			
4 Mission Module Components										
FY 99	L3 Comm. Sys., Camden, NJ	FP-Op	CECOM	Dec -98	Jun-00	18	292			

**REMARKS:** L3Comm Systems, Camden, NJ - L3 Communications Systems, Camden, NJ  
TBD \* In light of shutdown and termination of this program.







**Exhibit P-40, Budget Item Justification Sheet**

Date: February 2000

Appropriation / Budget Activity/Serial No: PROCUREMENT OF WPNS & TRKD CMBT VEHS / 1 / Tracked Combat Vehicles  
 P-1 Item Nomenclature: CARRIER, MOD (GB1930)

Program Elements for Code B Items: Code: Other Related Program Elements:

	Prior Years	FY 1997	FY 1998	FY 1999	FY 2000	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	To Complete	Total Prog
Proc Qty												
Gross Cost	663.7	44.7	39.5	55.0	62.8	45.1	48.1	46.3	48.7	48.6	576.1	1678.6
Less PY Adv Proc												
Plus CY Adv Proc												
Net Proc (P-1)	663.7	44.7	39.5	55.0	62.8	45.1	48.1	46.3	48.7	48.6	576.1	1678.6
Initial Spares	3.5											3.5
Total Proc Cost	667.2	44.7	39.5	55.0	62.8	45.1	48.1	46.3	48.7	48.6	576.1	1682.1
Flyaway U/C												
Wpn Sys Proc U/C												

**DESCRIPTION:** The M113 Family of Vehicles (FOV) consists of over 17,500 vehicles, 20 different variants/platforms, in service in U.S. Army units. The M113 FOV is almost one half of the tracked combat vehicle fleet in a mechanized infantry or armor heavy division. The family provides transport for troops, anti-tank, fire direction, smoke, mortar, cargo carrier and command & control systems. The fleet is required for the next 20 plus years and must be modified to increase mobility, survivability and to install operational enhancements. Operation Desert Storm (ODS) highlighted the need to improve the mobility and survivability, chemical protection, driver's night vision, fuel system, and Command Post Auxiliary Power Units (APU) for the fleet.

**JUSTIFICATION:**

- CREW CHEMICAL PROTECTION:** Provides the complete M8, M13 or M14 Nuclear, Biological and Chemical (NBC) System tailored for installation into each M113 variant. The installed system includes mounting provisions, blowers, filters, and air line heaters and hoses for use with crew issued ventilated face masks. The installed system permits vehicle operation in an NBC environment. Installation will occur during vehicle conversions to the A3 configuration. Vehicle conversion will be done, in Department of the Army Master Priority List (DAMPL) sequence, at depot or contractor facilities.
- BLOCK 1 (A3) MODIFICATION:** Provides improvements to enhance mobility and crew survivability. Provides a new 275 Horse Power (HP) turbocharged engine coupled with a new transmission. This powertrain replaces less reliable components and results in reduced Operations and Support (O&S) costs while increasing mobility to keep up with the M1 Abrams and Bradley Fighting Vehicle System fleet. Internal spall suppression liners, external armored fuel tanks and external armor mounting provisions increase crew survivability. Vehicle conversion to the A3 configuration will be done, in Department of the Army Master Priority List (DAMPL) sequence, at depot or contractor facilities.

<b>Exhibit P-40C Budget Item Justification Sheet</b>		Date February 2000
Appropriation / Budget Activity/Serial No. PROCUREMENT OF WPNS & TRKD CMBT VEHS / 1 / Tracked Combat Vehicles		P-1 Item Nomenclature CARRIER, MOD (GB1930)
Program Elements for Code B Items	Code	Other Related Program Elements
<p>3. DRIVER'S NIGHT VIEWER: The M19 image intensifier currently used on the M113 Family of Vehicles (FOV) has limited night vision. The AN/VVS-2(V)1A driver's night viewer has been adapted for use on the M113 FOV. The driver's night viewer enhances operational capability by providing capability for travelling in darkness and low visibility conditions equal to that on the M1 Abrams and Bradley Fighting Vehicle systems.</p>		

**Exhibit P-40M Budget Item Justification Sheet**

Date  
February 2000

Appropriation / Budget Activity/Serial No.      P-1 Item Nomenclature  
 PROCUREMENT OF WPNS & TRKD CMBT VEHS / 1 / Tracked Combat Vehicles      CARRIER, MOD (GB1930)

Program Elements for Code B Items      Code      Other Related Program Elements

Description		Fiscal Years									
OSIP NO.	Classification	FY 1998	FY 1999	FY 2000	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	TC	Total
Crew Chemical Protection											
1-91-05-4311	Oper Capability	0.8	0.8	1.6	0.8	1.0	0.9	1.0	1.0	12.2	20.1
Block 1											
1-84-05-4026	Oper Capability	362.9	53.4	59.2	43.2	45.6	44.1	46.2	46.2	547.7	1,248.5
Driver's Night Viewer											
1-94-05-4463	Oper Capability	3.4	0.8	2.0	1.1	1.5	1.3	1.5	1.4	16.2	29.2
Totals		367.1	55.0	62.8	45.1	48.1	46.3	48.7	48.6	576.1	1,297.8



INDIVIDUAL MODIFICATION

Date February 2000

MODIFICATION TITLE (Cont): Crew Chemical Protection 1-91-05-4311

FINANCIAL PLAN: (\$ in Millions)

	FY 1998 and Prior		FY 1999		FY 2000		FY 2001		FY 2002		FY 2003		FY 2004		FY 2005		TC		TOTAL		
	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	
RDT&E																					
PROCUREMENT																					
Kit Quantity					264		138		174		146		153		130		1586		2591		
Installation Kits				1.6		0.6		0.9		0.8		0.9		0.9		10.9		16.6			
Installation Kits, Nonrecurring Equipment																					
Equipment, Nonrecurring																					
Engineering Change Orders	0.8		0.8																		1.6
Data																					
Training Equipment																					
Support Equipment																					
Other																					
Interim Contractor Support																					
Installation of Hardware																					
FY 1998 & Prior Eqpt -- Kits																					
FY 1999 Eqpt -- Kits																					
FY 2000 Eqpt -- Kits					264	0.2													264	0.2	
FY 2001 Eqpt -- Kits							138	0.1											138	0.1	
FY 2002 Eqpt -- kits									174	0.1									174	0.1	
FY 2003 Eqpt -- kits											146	0.1							146	0.1	
FY 2004 Eqpt -- kits													153	0.1					153	0.1	
FY 2005 Eqpt -- kits																	130	0.1	130	0.1	
TC Equip-Kits																	1586	1.2	1586	1.2	
Total Installment							264	0.2	138	0.1	174	0.1	146	0.1	153	0.1	1716	1.3	2591	1.9	
Total Procurement Cost	0.8		0.8		1.6		0.8		1.0		0.9		1.0		1.0		12.2		20.1		

**INDIVIDUAL MODIFICATION**

Date February 2000

**MODIFICATION TITLE:** Block 1 1-84-05-4026

**MODELS OF SYSTEMS AFFECTED:** M113A2, M577A2, M981, M1059, M1064, M1068, OSV, M58

**DESCRIPTION / JUSTIFICATION:**

Provides improvements to enhance mobility and crew survivability. Provides a new 275 Horse Power (HP) turbocharged engine coupled with a new transmission. This powertrain replaces less reliable components and results in reduced Operations and Support (O&S) costs while increasing mobility to keep up with the M1 Abrams and Bradley Fighting Vehicle System fleet. Internal spall suppression liners, external armored fuel tanks and external armor mounting provisions increase crew survivability. Vehicle conversion to the A3 configuration will be done, in Department of the Army Master Priority List (DAMPL) sequence, at depot or contractor facilities.

**DEVELOPMENT STATUS / MAJOR DEVELOPMENT MILESTONES:**

**PLANNED                      ACCOMPLISHED**

**IPR Production Decision:**

May 86

**TDP Available:**

June 86

**Installation Schedule:**

Pr Yr	FY 1999				FY 2000				FY 2001				FY 2002				FY 2003				
	Totals	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
<b>Inputs</b>	1214	40	40	41	41	47	47	47	47	72	72	72	73	34	35	34	35	43	44	43	44
<b>Outputs</b>	975	80	80	81	80	80	47	47	47	47	72	72	72	73	34	35	34	35	43	44	43

	FY 2004				FY 2005				FY 2006				FY 2007				To Complete	Totals
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4		
<b>Inputs</b>	36	37	36	37	38	38	38	39	32	33	32	33					1586	4180
<b>Outputs</b>	44	36	37	36	37	38	38	38	39	32	33	32	33				1586	4180

**METHOD OF IMPLEMENTATION:** Depot/Contractor      **ADMINISTRATIVE LEADTIME:** 3 Months      **PRODUCTION LEADTIME:** 9 Months

**Contract Dates:** FY 1999 December 98      FY 2000 January 00      FY 2001 January 01

**Delivery Date:** FY 1999 May 99      FY 2000 October 00      FY 2001 October 01

INDIVIDUAL MODIFICATION

Date February 2000

MODIFICATION TITLE (Cont): Block 1 1-84-05-4026

FINANCIAL PLAN: (\$ in Millions)

	FY 1998 and Prior		FY 1999		FY 2000		FY 2001		FY 2002		FY 2003		FY 2004		FY 2005		TC		TOTAL		
	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	
RDT&E																					
PROCUREMENT																					
Kit Quantity	2564		202		264		138		174		146		153		130		1586		5357		
Installation Kits		279.4		30.4		38.4		22.5		28.3		25.3		27.8		26.4		324.2		802.7	
Installation Kits, Nonrecurring Equipment		3.4																		3.4	
Equipment, Nonrecurring Engineering Change Orders Data		42.9																		42.9	
PM Support-Govt				2.3		2.4		2.5		2.7		2.7		2.8		2.9		33.9		52.2	
System Tech Support -Contr Other				0.6		1.3		1.5		1.6		1.7		1.8		1.8		22.2		32.5	
Other		5.0																		5.0	
Interim Contractor Support Pre-Conversion/Modification				13.1		9.8		6.7		6.2		6.4		6.4		6.6		76.2		131.4	
FDT		1.2		1.0		0.9		1.2		1.2		0.8		0.7		0.8		8.5		16.3	
TPF		5.2		1.5		1.0		1.2		1.0		1.1		1.1		1.2		14.1		27.4	
Installation of Hardware																					
FY 1998 & Prior Eqpt -- Kits	1157	25.8	230	4.5															1387	30.3	
FY 1999 Eqpt -- Kits					202	5.4													202	5.4	
FY 2000 Eqpt -- Kits							264	7.6											264	7.6	
FY 2001 Eqpt -- Kits									138	4.6									138	4.6	
FY 2002 Eqpt -- kits											174	6.1							174	6.1	
FY 2003 Eqpt -- kits													146	5.6					146	5.6	
FY 2004 Eqpt -- kits															153	6.5			153	6.5	
FY 2005 Eqpt -- kits																	130	5.2	130	5.2	
TC Equip-Kits																	1586	63.4	1586	63.4	
Total Installment	1157	25.8	230	4.5	202	5.4	264	7.6	138	4.6	174	6.1	146	5.6	153	6.5	1716	68.6	4180	134.7	
Total Procurement Cost		362.9		53.4		59.2		43.2		45.6		44.1		46.2		46.2		547.7		1248.5	

**INDIVIDUAL MODIFICATION**

Date February 2000

**MODIFICATION TITLE:** Driver's Night Viewer 1-94-05-4463

**MODELS OF SYSTEMS AFFECTED:** M113 Family of Vehicles

**DESCRIPTION / JUSTIFICATION:**

The M19 image intensifier currently used on the M113 Family of Vehicles (FOV) has limited night vision. The AN/VVS-2(V)1A driver's night viewer has been adapted for use on the M113 FOV. The driver's night viewer enhances operational capability by providing capability for travelling in darkness and low visibility conditions equal to that on the M1 Abrams and Bradley Fighting Vehicle systems.

**DEVELOPMENT STATUS / MAJOR DEVELOPMENT MILESTONES:**

**PLANNED      ACCOMPLISHED**

**TDP Available:** September 94

**Installation Schedule:**

Pr Yr	FY 1999				FY 2000				FY 2001				FY 2002				FY 2003			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
<b>Totals</b>																				
<b>Inputs</b>	182	50	50	50	50	50	51	51	66	66	66	66	34	35	34	35	43	44	43	44
<b>Outputs</b>	132	50	50	50	50	50	50	51	51	66	66	66	66	34	35	34	35	43	44	43

  

	FY 2004				FY 2005				FY 2006				FY 2007				To Complete	Totals
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4		
<b>Inputs</b>	36	37	36	37	38	38	38	39	32	33	32	33					1586	3175
<b>Outputs</b>	44	36	37	36	37	38	38	38	39	32	33	32	33				1586	3175

**METHOD OF IMPLEMENTATION:** Depot/Contractor      **ADMINISTRATIVE LEADTIME:** 24 Months      **PRODUCTION LEADTIME:** 3 Months  
**Contract Dates:** FY 1999 January 99      FY 2000 January 00      FY 2001 January 01  
**Delivery Date:** FY 1999 April 99      FY 2000 April 00      FY 2001 April 01

INDIVIDUAL MODIFICATION

Date February 2000

MODIFICATION TITLE (Cont): Driver's Night Viewer 1-94-05-4463

FINANCIAL PLAN: (\$ in Millions)

	FY 1998 and Prior		FY 1999		FY 2000		FY 2001		FY 2002		FY 2003		FY 2004		FY 2005		TC		TOTAL	
	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$
RDT&E																				
PROCUREMENT																				
Kit Quantity	382		202		264		138		174		146		153		130		1586		3175	
Installation Kits		3.0		0.6		1.8		0.9		1.3		1.0		1.2		1.0		12.2		23.0
Installation Kits, Nonrecurring Equipment																				
Equipment, Nonrecurring																				
Engineering Change Orders																				
Data		0.2																		0.2
Training Equipment																				
Support Equipment																				
Other																				
Interim Contractor Support																				
Installation of Hardware																				
FY 1998 & Prior Eqpt -- Kits	200	0.2	182	0.2															382	0.4
FY 1999 Eqpt -- Kits					202	0.2													202	0.2
FY 2000 Eqpt -- Kits							264	0.2											264	0.2
FY 2001 Eqpt -- Kits									138	0.2									138	0.2
FY 2002 Eqpt -- kits											174	0.3							174	0.3
FY 2003 Eqpt -- kits													146	0.3					146	0.3
FY 2004 Eqpt -- kits															153	0.4			153	0.4
FY 2005 Eqpt -- kits																	130	0.3	130	0.3
TC Equip-Kits																	1586	3.7	1586	3.7
Total Installment	200	0.2	182	0.2	202	0.2	264	0.2	138	0.2	174	0.3	146	0.3	153	0.4	1716	4.0	3175	6.0
Total Procurement Cost		3.4		0.8		2.0		1.1		1.5		1.3		1.5		1.4		16.2		29.2

**Exhibit P-40, Budget Item Justification Sheet**

Date: February 2000

Appropriation / Budget Activity/Serial No: PROCUREMENT OF WPNS & TRKD CMBT VEHS / 1 / Tracked Combat Vehicles  
 P-1 Item Nomenclature: FIST VEHICLE (MOD) (GZ2300)

Program Elements for Code B Items: 0203735A  
 Code: B  
 Other Related Program Elements:

	Prior Years	FY 1997	FY 1998	FY 1999	FY 2000	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	To Complete	Total Prog
Proc Qty			19	27	26	29	42	77	48	48		316
Gross Cost	0.0	0.0	15.2	24.5	27.1	31.9	35.7	47.1	47.3	38.0	15.0	281.9
Less PY Adv Proc												
Plus CY Adv Proc												
Net Proc (P-1)	0.0	0.0	15.2	24.5	27.1	31.9	35.7	47.1	47.3	38.0	15.0	281.9
Initial Spares												
Total Proc Cost	0.0	0.0	15.2	24.5	27.1	31.9	35.7	47.1	47.3	38.0	15.0	281.9
Flyaway U/C												
Wpn Sys Proc U/C			.8	.9	1.0	1.1	.9	.6	1.0	.8		

**DESCRIPTION:** The Bradley Fire Support Vehicle (BFIST) integrates Mission Equipment Packages into a Bradley Fighting Vehicle to support heavy maneuver force operations. The BFIST replaces the aging M981 Fire Support Vehicle for fire mission planning, support and execution for maneuver company commanders. The Fire Support Team is attached to a mechanized infantry or armor company and is primarily responsible for developing and executing fire support plans that enable success on the battlefield. The BFIST allows fire support operations to be performed on the battlefield in vehicles with the same signature, survivability, and mobility as other Bradley maneuver units.

**JUSTIFICATION:** The current Fire Support Vehicle M981 was unable to maintain the operational tempo of Bradley /Abrams equipped maneuver forces during Operation Desert Storm (ODS). The A3 BFIST will displace fielded BFIST ODS vehicles. Those displaced vehicles will be modernized overhauled, then fielded to units that have not previously received the BFIST vehicle. Additionally, the M981 displayed a number of operational deficiencies and shortcomings remedied by the BFIST design. The BFIST provides synchronization of combined arms operations.

<b>Exhibit P-5, Weapon WTCV Cost Analysis</b>		Appropriation/ Budget Activity/Serial No: PROCUREMENT OF WPNS & TRKD CMBT VEHS / 1 / Tracked Combat Vehicles			P-1 Line Item Nomenclature: FIST VEHICLE (MOD) (GZ2300)			Weapon System Type:			Date: February 2000		
<b>Cost Elements</b>	ID CD	<b>FY 98</b>			<b>FY 99</b>			<b>FY 00</b>			<b>FY 01</b>		
		TotalCost	Qty	UnitCost	TotalCost	Qty	UnitCost	TotalCost	Qty	UnitCost	TotalCost	Qty	UnitCost
		\$000	Each	\$000	\$000	Each	\$000	\$000	Each	\$000	\$000	Each	\$000
Hardware Cost													
1. Vehicle Upgrade					9709	27	360	7240	26	278	7510	29	259
2. MEP								2047	27	76	2228	29	77
3. Pre-Mod Depot Maintenance					5813	21	277	7589	26	292	8579	29	296
<b>SUBTOTAL</b>					<b>15522</b>			<b>16876</b>			<b>18317</b>		
Non Recurring Production													
3. Engineering Contractor					1123			2920			5170		
4. Engineering Government					1348			1108			1329		
5. Program Management Administration					404			332			398		
6. Reimbursable Matrix Support					334			275			329		
7. Fielding					1440			5604			5955		
8. Test & Evaluation					342								
9. TMDE (DSETS)					4000						400		
<b>SUBTOTAL</b>					<b>8991</b>			<b>10239</b>			<b>13581</b>		
<b>TOTAL</b>					<b>24513</b>			<b>27115</b>			<b>31898</b>		

## Exhibit P-5a, Budget Procurement History and Planning

Date: February 2000

Appropriation / Budget Activity/Serial No: PROCUREMENT OF WPNS & TRKD CMBT VEHS / 1 / Tracked Combat Vehicles		Weapon System Type:			P-1 Line Item Nomenclature: FIST VEHICLE (MOD) (GZ2300)					
WBS Cost Elements: Fiscal Years	Contractor and Location	Contract Method and Type	Location of PCO	Award Date	Date of First Delivery	QTY Each	Unit Cost \$000	Specs Avail Now?	Date Revsn Avail	RFP Issue Date
1. Vehicle Upgrade										
FY 99	UDLP, York, PA	SS/FFP	USATACOM, Warren, MI	Nov-98	Jan-00	27	360			
FY 00	UDLP, York, PA	SS/FFP	USATACOM, Warren, MI	Mar-00	Feb-01	26	278			
FY 01	UDLP, York, PA	SS/FFP	USATACOM, Warren, MI	Nov-00	Jan-02	29	259			
2. MEP										
FY 00	SEI, Sanford, FL	SS/FFP	USATACOM, Warren, MI	Dec-99	Oct-00	27	76			
FY 01	SEI, Sanford, FL	SS/FFP	USATACOM, Warren, MI	Nov-00	Oct-01	29	77			

REMARKS:







**Exhibit P-40, Budget Item Justification Sheet**

Date: February 2000

Appropriation / Budget Activity/Serial No: PROCUREMENT OF WPNS & TRKD CMBT VEHS / 1 / Tracked Combat Vehicles  
 P-1 Item Nomenclature: BFVS SERIES (MOD) (GZ2400)

Program Elements for Code B Items: Code: Other Related Program Elements:

	Prior Years	FY 1997	FY 1998	FY 1999	FY 2000	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	To Complete	Total Prog
Proc Qty												
Gross Cost	684.0	113.6	58.6	74.0	31.3	37.1	39.2	49.7	59.7	59.5	0.0	1206.7
Less PY Adv Proc												
Plus CY Adv Proc												
Net Proc (P-1)	684.0	113.6	58.6	74.0	31.3	37.1	39.2	49.7	59.7	59.5	0.0	1206.7
Initial Spares												
Total Proc Cost	684.0	113.6	58.6	74.0	31.3	37.1	39.2	49.7	59.7	59.5	0.0	1206.7
Flyaway U/C												
Wpn Sys Proc U/C												

**DESCRIPTION:** The funds appropriated, budgeted, and programmed in this budget line will provide for the procurement and application of modification kits for the Bradley Fighting Vehicle. The Operation Desert Storm improvements are 5 ECPs which will correct deficiencies identified in Operation Desert Storm and include: Laser Range Finder, Position Navigation System, Equipment Restow Improvement, Combat Identification System, and Drivers Vision Enhancer. The A1 to A2 conversion effort increases the vehicle survivability and brings the vehicle up to the current A2 configuration, with the addition of the High Survivability Kit and the 600HP power pack. The A1 to A2 conversion effort is complete. Operational improvements are the Transmission Electronic Controller, the Vehicle Intercommunications System, the Digital Electronic Control Assembly, and Armor Tiles. The A2 ODS Applique(+) modification will integrate Bradley Fighting Vehicles with the Army's Applique computer system to improve situational awareness. The Battlefield Combat Identification System will provide positive identification of friendly ground vehicles to minimize battlefield fratricide. The M2A2ODS to M3A2ODS conversion program will reconfigure M2A2ODS vehicles to the M3A2ODS configuration to allow fielding under the pure fleet concept in accordance with the Armored Systems Modernization Plan. Most of these modifications will be applied concurrently in "blocks" to reduce application cost and inconvenience to the unit.

**JUSTIFICATION:** The programs in these P-Forms were initiated to meet requirements identified to correct deficiencies identified in Operation Desert Storm and to improve the lethality, survivability, mobility and situational awareness of the Bradley Fighting Vehicle. Reduced Bradley Fighting Vehicle capability, survivability, and mobility will occur if these modifications are delayed or reduced.

**Exhibit P-40M Budget Item Justification Sheet**

Date  
February 2000

Appropriation / Budget Activity/Serial No.      P-1 Item Nomenclature  
 PROCUREMENT OF WPNS & TRKD CMBT VEHS / 1 / Tracked Combat Vehicles      BFVS SERIES (MOD) (GZ2400)

Program Elements for Code B Items      Code      Other Related Program Elements

Description		Fiscal Years									
OSIP NO.	Classification	FY 1998	FY 1999	FY 2000	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	TC	Total
A1-A2 Conversion											
1-84-05-4038	Oper. Capability	381.9	22.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	404.2
A2 ODS Mods											
1-92-05-4404	Oper. Capability	149.8	18.4	2.1	1.0	7.5	21.3	17.3	0.0	0.0	217.3
Transmission Electronic Controller (TEC)											
1-90-05-4282	Oper. Capability	14.5	3.2	0.0	0.0	1.2	1.2	0.0	0.0	0.0	20.1
Vehicle Intercom System											
1-90-05-4284	Oper. Capability	13.1	1.4	0.0	0.0	1.3	1.4	0.0	0.0	0.0	17.2
DECA											
1-93-05-4441	Oper. Capability	17.4	1.9	0.0	0.0	0.8	0.6	0.0	0.0	0.0	20.8
HALON Replacement											
1-92-05-4422	Legisl. Compliance	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
A2 ODS Applique											
1-98-05-4539	Oper. Capability	0.0	10.0	2.7	16.6	7.8	16.0	11.9	11.9	0.0	76.9
Battlefield Combat Identification System											
1-98-05-4546	Operational Capability	0.0	0.0	1.9	2.6	2.6	2.6	1.3	0.5	0.0	11.6
A2 High Payoff Improvements (No P3a Set)											
1-98-05-4550	Operational Capability	0.0	0.0	0.0	0.0	0.0	6.6	29.1	47.1	0.0	82.8
Armor tiles											
1-84-05-4038	Oper. Capability	72.1	16.7	24.6	0.0	0.0	0.0	0.0	0.0	0.0	113.5
M2A2ODS to M3A2ODS Conversion											
1-99-05-4564	Oper. Capability	0.0	0.0	0.0	17.1	18.0	0.0	0.0	0.0	0.0	35.0
<b>Totals</b>		<b>648.8</b>	<b>74.0</b>	<b>31.3</b>	<b>37.1</b>	<b>39.2</b>	<b>49.7</b>	<b>59.7</b>	<b>59.5</b>	<b>0.0</b>	<b>999.4</b>

**INDIVIDUAL MODIFICATION**

Date February 2000

**MODIFICATION TITLE:** A1-A2 Conversion 1-84-05-4038

**MODELS OF SYSTEMS AFFECTED:** M2A1 (IFV) / M3A1 (CFV)

**DESCRIPTION / JUSTIFICATION:**

The BFVS conversion effort converts the A1 configuration to an A2 configuration.

The conversion effort includes:

1. High Survivability (HS) Kit which will enhance vehicle survivability through the application of alternate armor and selective use of crew compartment spall liners for increased protection against threat from frontal attack. The HS kit also contains other associated changes such as restowage, swim curtain, IFV firing ports, and M240 gun upright.
2. The 600HP power pack, which includes the 600 HP engine and the reliability improved 500-3 Transmission which eliminates the adverse impact of increased vehicle weight on vehicle performance and reliability, resulting from High Survivability changes.

**DEVELOPMENT STATUS / MAJOR DEVELOPMENT MILESTONES:**

PLANNED

ACCOMPLISHED

Preliminary Design Review:

NA

Critical Design Review:

NA

Contractor Test and Evaluation:

NA

Development Test and Evaluation:

NA

Initial Operational Test and Evaluation:

NA

IPR Production Decision:

3Q89

3Q89

3Q89

3Q89

**Installation Schedule:**

Pr Yr	FY 1999				FY 2000				FY 2001				FY 2002				FY 2003			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
<b>Totals</b>																				
<b>Inputs</b>	1294	14	32																	
<b>Outputs</b>	1283	11	14	32																

  

	FY 2004				FY 2005				FY 2006				FY 2007				To Complete	Totals
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4		
<b>Inputs</b>																		1340
<b>Outputs</b>																		1340

**METHOD OF IMPLEMENTATION:** Depot Conversion

ADMINISTRATIVE LEADTIME:

6 Months

PRODUCTION LEADTIME:

12 Months

Contract Dates:

FY 1999 N/A

FY 2000 N/A

FY 2001 N/A

Delivery Date:

FY 1999 N/A

FY 2000 N/A

FY 2001 N/A

INDIVIDUAL MODIFICATION

Date

February 2000

MODIFICATION TITLE (Cont): A1-A2 Conversion 1-84-05-4038

FINANCIAL PLAN: (\$ in Millions)

	FY 1998 and Prior		FY 1999		FY 2000		FY 2001		FY 2002		FY 2003		FY 2004		FY 2005		TC		TOTAL		
	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	
RDT&E																					
PROCUREMENT																					
Kit Quantity																					
Installation Kits																					
Installation Kits Nonrecurring																					
600 HP Engine	1358	47.5																	1358	47.5	
500-3 Transmission	1358	39.2																	1358	39.2	
High Survivability kits	1358	191.0																	1358	191.0	
Engineering Change Orders		1.6																			1.6
Training Equipment																					
Support Equipment																					
Other		2.8																			2.8
Interim Contractor Support																					
Pre-mod Depot Maintenance			57	14.1															57	14.1	
Installation of Hardware																					
FY 1998 & Prior Eqpt -- Kits	1283	99.9	57	8.2																1340	108.1
FY 1999 Eqpt -- Kits																					
FY 2000 Eqpt -- Kits																					
FY 2001 Eqpt -- Kits																					
FY 2002 Eqpt -- kits																					
FY 2003 Eqpt -- kits																					
FY 2004 Eqpt -- kits																					
FY 2005 Eqpt -- kits																					
TC Equip-Kits																					
Total Installment	1283	99.9	57	8.2																1340	108.1
Total Procurement Cost		381.9		22.3																	404.2

**INDIVIDUAL MODIFICATION**

Date February 2000

**MODIFICATION TITLE:** A2 ODS Mods 1-92-05-4404

**MODELS OF SYSTEMS AFFECTED:** M2A2/M3A2

**DESCRIPTION / JUSTIFICATION:**

Six vehicle improvements (ECP's) which will correct deficiencies identified in Operation Desert Storm. These increase vehicle lethality and survivability and situational awareness. Additionally, included in this effort are Armored Hatches to further improve vehicle survivability.

- a. Laser Range Finder: will give the BFVS a first burst on target capability and reduce the time required to acquire and kill a target.
- b. Position Navigation System: Global Positioning System (GPS) integrating hardware and a self calibrating digital compass. This will enable the Bradley commander to determine his exact location at all times and determine the heading and distance to any location.
- c. Equipment Restow Improvement: Improves the method of stowing internal and external equipment.
- d. Combat Identification System: Provides integration hardware for a passive system that will provide visual and thermal signatures detectable between ground to ground vehicles and from air to ground.
- e. Driver's Thermal Viewer: Increases the driver's ability to see through battlefield obscurants such as dust, fog and smoke during night and day.
- f. Missile Countermeasure Device: Provides additional protection against a variety of anti tank missiles.

**DEVELOPMENT STATUS / MAJOR DEVELOPMENT MILESTONES:**

	<u>PLANNED</u>	<u>ACCOMPLISHED</u>
Preliminary Design Review:	4Q93	4Q93
Critical Design Review:	2Q94	2Q94
Contractor Test and Evaluation:	3Q94	3Q94
Development Test and Evaluation:	4Q94	1Q95
Initial Operational Test and Evaluation:	1Q95	1Q95
IPR Production Decision	2Q95	2Q95

**Installation Schedule:**

Pr Yr	FY 1999				FY 2000				FY 2001				FY 2002				FY 2003				
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	
<b>Inputs</b>	922	98	98	98	50	50	49	7	8	8	8	9	15	14	14	14	8	8	8	7	20
<b>Outputs</b>	823	99	98	98	98	50	50	49	7	8	8	8	9	15	14	14	14	8	8	8	7

	FY 2004				FY 2005				FY 2006				FY 2007				To Complete	Totals			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4					
<b>Inputs</b>	19	19	19																		1570
<b>Outputs</b>	20	19	19	19																	1570

**METHOD OF IMPLEMENTATION:** Contr/Depot/Field ADMINISTRATIVE LEADTIME: 6 Months PRODUCTION LEADTIME: 12 Months

Contract Dates: FY 1999 Dec 98 FY 2000 N/A FY 2001 N/A

Delivery Date: FY 1999 Dec 99 FY 2000 N/A FY 2001 N/A

INDIVIDUAL MODIFICATION

Date

February 2000

MODIFICATION TITLE (Cont): A2 ODS Mods 1-92-05-4404

FINANCIAL PLAN: (\$ in Millions)

	FY 1998 and Prior		FY 1999		FY 2000		FY 2001		FY 2002		FY 2003		FY 2004		FY 2005		TC		TOTAL			
	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$		
RDT&E																						
PROCUREMENT																						
Kit Quantity																						
Installation Kits	1320	136.2	137	10.1					56	6.3	57	9.6	20	4.3							1590	166.5
Installation Kits, Nonrecurring Equipment																						
Equipment, Nonrecurring		2.0																				2.0
Engineering Change Orders		5.8		0.1																		5.8
Data																						
Training Equipment																						
Support Equipment																						
Other																						
Pre-mod Depot Maintenance											36	9.4	41	10.9							77	20.2
NOTE: Application quantities and costs reflect kits applied by field retrofit only. Costs for ODS application during AO-A2 remanufacture, BFIST conversion and A1-A2 conversion are reflected on their respective P-forms.																						
Installation of Hardware																						
FY 1998 & Prior Eqpt -- Kits	695	5.9	118	5.8																813	11.8	
FY 1999 Eqpt -- Kits			50	2.4	43	2.1	20	1.0	24	1.2									137	6.6		
FY 2000 Eqpt -- Kits																						
FY 2001 Eqpt -- Kits																						
FY 2002 Eqpt -- kits											32	1.6								32	1.6	
FY 2003 Eqpt -- kits											15	0.7	42	2.1						57	2.9	
FY 2004 Eqpt -- kits																						
FY 2005 Eqpt -- kits																						
TC Equip-Kits																						
Total Installment	695	5.9	168	8.2	43	2.1	20	1.0	24	1.2	47	2.3	42	2.1						1039	22.9	
Total Procurement Cost		149.8		18.4		2.1		1.0		7.5		21.3		17.3							217.3	

**INDIVIDUAL MODIFICATION**

Date February 2000

**MODIFICATION TITLE:** Transmission Electronic Controller (TEC) 1-90-05-4282

**MODELS OF SYSTEMS AFFECTED:** M2A2/M3A2

**DESCRIPTION / JUSTIFICATION:**

The Transmission Electronic Controller (TEC) replaces the hydromechanical transmission control with an electromechanical control. The TEC directly improves transmission maintainability and reliability. The control features of TEC will provide improved acceleration, fuel utilization and hot and cold performance, and better low speed maneuverability.

**DEVELOPMENT STATUS / MAJOR DEVELOPMENT MILESTONES:**

IPR Production Decision: 2Q94  
TDP Available: 2Q94

**Installation Schedule:**

Pr Yr	FY 1999				FY 2000				FY 2001				FY 2002				FY 2003				
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	
<b>Totals</b>																					
<b>Inputs</b>	483	105	105	104	56	50	49	7	8	8	8	9	15	14	14	14	8	8	8	7	20
<b>Outputs</b>	384	99	105	105	104	56	50	49	7	8	8	8	9	15	14	14	14	8	8	8	7

	FY 2004				FY 2005				FY 2006				FY 2007				To Complete	Totals			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4					
<b>Inputs</b>	19	19	19																		1157
<b>Outputs</b>	20	19	19	19																	1157

**METHOD OF IMPLEMENTATION:** Contr/Depot/Field ADMINISTRATIVE LEADTIME: 6 Months PRODUCTION LEADTIME: 6 Months  
**Contract Dates:** FY 1999 Jan 99 FY 2000 N/A FY 2001 N/A  
**Delivery Date:** FY 1999 Aug 99 FY 2000 N/A FY 2001 N/A

INDIVIDUAL MODIFICATION

Date

February 2000

MODIFICATION TITLE (Cont): Transmission Electronic Controller (TEC) 1-90-05-4282

FINANCIAL PLAN: (\$ in Millions)

	FY 1998 and Prior		FY 1999		FY 2000		FY 2001		FY 2002		FY 2003		FY 2004		FY 2005		TC		TOTAL		
	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	
RDT&E																					
PROCUREMENT																					
Kit Quantity	870	14.5	175	3.2					55	1.2	57	1.2								1157	20.1
Installation Kits																					
Installation Kits, Nonrecurring																					
Equipment																					
Equipment, Nonrecurring																					
Engineering Change Orders																					
Data																					
Training Equipment																					
Support Equipment																					
Other																					
Interim Contractor Support																					
NOTE: Application is budgeted as part of the A2 ODS program																					
Installation of Hardware																					
FY 1998 & Prior Eqpt -- Kits																					
FY 1999 Eqpt -- Kits																					
FY 2000 Eqpt -- Kits																					
FY 2001 Eqpt -- Kits																					
FY 2002 Eqpt -- kits																					
FY 2003 Eqpt -- kits																					
FY 2004 Eqpt -- kits																					
FY 2005 Eqpt -- kits																					
TC Equip-Kits																					
Total Installment																					
Total Procurement Cost		14.5		3.2						1.2		1.2									20.1

**INDIVIDUAL MODIFICATION**

Date February 2000

**MODIFICATION TITLE:** Vehicle Intercom System 1-90-05-4284

**MODELS OF SYSTEMS AFFECTED:** A2 ODS M2/M3

**DESCRIPTION / JUSTIFICATION:**

The VIS system is a replacement for the AN/VIC-1 intercom system. It is a digital intercom system which provides internal communications as well as access to the vehicle radios. This is a non-developmental item to be applied to the A2 ODS vehicles.

**DEVELOPMENT STATUS / MAJOR DEVELOPMENT MILESTONES:**

PLANNED

ACCOMPLISHED

Preliminary Design Review:

NA

NA

Critical Design Review:

NA

NA

Contractor Test and Evaluation:

NA

NA

Development Test and Evaluation:

NA

NA

Initial Operational Test and Evaluation:

2Q95

2Q95

IPR Production Decision

3Q95

3Q95

TDP Available:

NA

NA

**Installation Schedule:**

Pr Yr	FY 1999				FY 2000				FY 2001				FY 2002				FY 2003				
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	
<b>Totals</b>																					
<b>Inputs</b>	505	98	98	98	50	50	49	7	8	8	8	9	15	14	14	14	8	8	8	7	20
<b>Outputs</b>	406	99	98	98	98	50	50	49	7	8	8	8	9	15	14	14	14	8	8	8	7

	FY 2004				FY 2005				FY 2006				FY 2007				To Complete	Totals			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4					
<b>Inputs</b>	19	19	19																		1153
<b>Outputs</b>	20	19	19	19																	1153

**METHOD OF IMPLEMENTATION:** contractor/Depot      **ADMINISTRATIVE LEADTIME:** 6 Months      **PRODUCTION LEADTIME:** 6 Months

**Contract Dates:** FY 1999 Mar 99      FY 2000 N/A      FY 2001 N/A

**Delivery Date:** FY 1999 Sep 99      FY 2000 N/A      FY 2001 N/A

INDIVIDUAL MODIFICATION

Date February 2000

MODIFICATION TITLE (Cont): Vehicle Intercom System 1-90-05-4284

FINANCIAL PLAN: (\$ in Millions)

	FY 1998 and Prior		FY 1999		FY 2000		FY 2001		FY 2002		FY 2003		FY 2004		FY 2005		TC		TOTAL		
	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	
RDT&E																					
PROCUREMENT																					
Kit Quantity																					
Installation Kits	964	13.1	77	1.4					55	1.3	57	1.4									1153 17.2
Installation Kits, Nonrecurring Equipment																					
Equipment, Nonrecurring																					
Engineering Change Orders																					
Data																					
Training Equipment																					
Support Equipment																					
Other																					
Interim Contractor Support																					
APPLICATION SCHEDULED AND BUDGETED AS PART OF A2ODS PROGRAM																					
Installation of Hardware																					
FY 1998 & Prior Eqpt -- Kits																					
FY 1999 Eqpt -- Kits																					
FY 2000 Eqpt -- Kits																					
FY 2001 Eqpt -- Kits																					
FY 2002 Eqpt -- kits																					
FY 2003 Eqpt -- kits																					
FY 2004 Eqpt -- kits																					
FY 2005 Eqpt -- kits																					
TC Equip-Kits																					
Total Installment																					
Total Procurement Cost		13.1		1.4						1.3		1.4									17.2

**INDIVIDUAL MODIFICATION**

Date February 2000

**MODIFICATION TITLE:** Digital Electronic Control Assembly (DECA) 1-93-05-4441

**MODELS OF SYSTEMS AFFECTED:** M2A2/M3A2

**DESCRIPTION / JUSTIFICATION:**

The Digital Electronic Control Assembly (DECA) is the microprocessor based controller of the turret drive system. It transfers signals from crew and sensor inputs to the appropriate subsystem to execute a specific task. The DECA replaces the Electronic Control Assembly (ECA) and provides built in testing, improved reliability and elimination of hull and turret gyro.

**DEVELOPMENT STATUS / MAJOR DEVELOPMENT MILESTONES:**

PLANNED

ACCOMPLISHED

Preliminary Design Review:

NA

Critical Design Review:

NA

Contractor Test and Evaluation:

NA

Development Test and Evaluation:

NA

Initial Operational Test and Evaluation:

NA

IPR Production Decision

3Q89

3Q89

TDP Available:

3Q89

3Q89

**Installation Schedule:**

Pr Yr	FY 1999				FY 2000				FY 2001				FY 2002				FY 2003				
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	
<b>Totals</b>																					
<b>Inputs</b>	468	91	91	91	50	50	49	7	8	8	8	9	15	14	14	14	8	8	8	7	20
<b>Outputs</b>	377	91	91	91	91	50	50	49	7	8	8	8	9	15	14	14	14	8	8	8	7

	FY 2004				FY 2005				FY 2006				FY 2007				To Complete	Totals			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4					
<b>Inputs</b>	19	19	19																		1095
<b>Outputs</b>	20	19	19	19																	1095

**METHOD OF IMPLEMENTATION:** Depot/Field ADMINISTRATIVE LEADTIME: 24 Months PRODUCTION LEADTIME: 24 Months

Contract Dates: FY 1999 Jan 99 FY 2000 N/A FY 2001 N/A

Delivery Date: FY 1999 Sep 99 FY 2000 N/A FY 2001 N/A

INDIVIDUAL MODIFICATION

Date February 2000

MODIFICATION TITLE (Cont): DECA 1-93-05-4441

FINANCIAL PLAN: (\$ in Millions)

	FY 1998 and Prior		FY 1999		FY 2000		FY 2001		FY 2002		FY 2003		FY 2004		FY 2005		TC		TOTAL		
	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	
RDT&E																					
PROCUREMENT																					
Kit Quantity																					
Installation Kits	776	17.4	263	1.9					32	0.8	24	0.6									1095 20.8
Installation Kits, Nonrecurring																					
Equipment																					
Equipment, Nonrecurring																					
Engineering Change Orders																					
Data																					
Training Equipment																					
Support Equipment																					
Other																					
Interim Contractor Support																					
APPLICATION BUDGETED AS PART OF A1-A2 CONVERSION AND A2 ODS APPLICATION																					
Installation of Hardware																					
FY 1998 & Prior Eqpt -- Kits																					
FY 1999 Eqpt -- Kits																					
FY 2000 Eqpt -- Kits																					
FY 2001 Eqpt -- Kits																					
FY 2002 Eqpt -- kits																					
FY 2003 Eqpt -- kits																					
FY 2004 Eqpt -- kits																					
FY 2005 Eqpt -- kits																					
TC Equip-Kits																					
Total Installment																					
Total Procurement Cost		17.4		1.9						0.8		0.6									20.8

**INDIVIDUAL MODIFICATION**

Date February 2000

**MODIFICATION TITLE:** A2 ODS Applique 1-98-05-4539

**MODELS OF SYSTEMS AFFECTED:** M2A2ODS, M6A1 Linebacker, M7A1 BFIST

**DESCRIPTION / JUSTIFICATION:**

**ODS Vehicle Applique:** For Force XXI and the First Digitized Division, the Bradley Infantry vehicles will be integrated with the Army's Applique(+) computer system. The integration kit will include mounting the flat panel display, keyboard and CPU inside of the Bradley Turret and interfacing the vehicle systems (Bradley Eyesafe Laser Rangefinder and Position/Navigation System) to applique(+) to provide Laser Designation and Steer-to capability. The Bradley Infantry variant will also include an additional display in the hull for squad situational awareness and a turret mounted display for the Bradley commander.

**DEVELOPMENT STATUS / MAJOR DEVELOPMENT MILESTONES:** PLANNED ACTUAL

Preliminary Design Review:	7/95	7/95
Critical Design Review:	1/96	1/96
LUT:	9/98	8/98
IOT&E:	09/00	
MS III	03/01	

**Installation Schedule:**

Pr Yr	FY 1999				FY 2000				FY 2001				FY 2002				FY 2003			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
<b>Inputs</b>											31	31	32	32	65	65	65	66	42	41
<b>Outputs</b>											31	31	32	32	65	65	65	66	42	41

	FY 2004				FY 2005				FY 2006				FY 2007				To Complete	Totals
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4		
<b>Inputs</b>	42	42	54	54	54	55	44	44	43	43	40	39	39	39				1102
<b>Outputs</b>	42	42	54	54	54	55	44	44	43	43	40	39	39	39				1102

**METHOD OF IMPLEMENTATION:** Contractor Applied ADMINISTRATIVE LEADTIME: 6 Months PRODUCTION LEADTIME: 12 Months

Contract Dates: FY 1999 Jan 99 FY 2000 Jun 00 FY 2001 Jun 01

Delivery Date: FY 1999 Jun 00 FY 2000 Jun 01 FY 2001 Jun 02

INDIVIDUAL MODIFICATION

Date February 2000

MODIFICATION TITLE (Cont): A2 ODS Applique 1-98-05-4539

FINANCIAL PLAN: (\$ in Millions)

	FY 1998 and Prior		FY 1999		FY 2000		FY 2001		FY 2002		FY 2003		FY 2004		FY 2005		TC		TOTAL		
	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	
RDT&E																					
PROCUREMENT																					
ODS Installation B-Kits					126	2.7	261	5.7	159	3.5	225	5.1	174	4.0	157	3.7			1102	24.7	
ODS Installation A-Kits			50	5.6			193	10.9	93	4.3	186	10.9	135	7.9	130	8.2			787	47.8	
ODS Nonrecurring				3.1																	3.1
IOTE Refurbishment				0.9																	0.9
Data				0.4																	0.4
Support Equipment																					
Other																					
Interim Contractor Support																					
NOTE: Application costs are included in procurement unit cost																					
Installation of Hardware																					
FY 1998 & Prior Eqpt -- Kits																					
FY 1999 Eqpt -- Kits																					
FY 2000 Eqpt -- Kits																					
FY 2001 Eqpt -- Kits																					
FY 2002 Eqpt -- kits																					
FY 2003 Eqpt -- kits																					
FY 2004 Eqpt -- kits																					
FY 2005 Eqpt -- kits																					
TC Equip-Kits																					
Total Installment																					
Total Procurement Cost				10.0		2.7		16.6		7.8		16.0		11.9		11.9					76.9

**INDIVIDUAL MODIFICATION**

Date February 2000

**MODIFICATION TITLE:** Battlefield Combat Identification System 1-98-05-4546

**MODELS OF SYSTEMS AFFECTED:** M2A2ODS

**DESCRIPTION / JUSTIFICATION:**

The Battlefield Combat Identification System (BCIS) is a millimeter wave, question and answer system that will provide positive identification of friendly ground vehicles to minimize battlefield fratricide and enhance combat effectiveness. The BCIS is a designated Army Horizontal Technology Integration (HTI) initiative.

**DEVELOPMENT STATUS / MAJOR DEVELOPMENT MILESTONES:**

MSII	4Q93
CDR	2Q94
PPQT/LUT	1Q95
TF XXI Demo	3Q97
NATO Demo	4Q97
LRIP IPR	2Q99

**Installation Schedule:**

Pr Yr	FY 1999				FY 2000				FY 2001				FY 2002				FY 2003			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
<b>Totals</b>									7	7	8	8	10	10	10	10	10	10	10	10
<b>Inputs</b>																				
<b>Outputs</b>										7	7	8	8	10	10	10	10	10	10	10

  

	FY 2004				FY 2005				FY 2006				FY 2007				To Complete	Totals
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4		
<b>Inputs</b>	10	10	10	10	5	5	5	5	4	4								178
<b>Outputs</b>	10	10	10	10	10	5	5	5	5	4	4							178

**METHOD OF IMPLEMENTATION:** Cntr/Depot      **ADMINISTRATIVE LEADTIME:** 3 Months      **PRODUCTION LEADTIME:** 12 Months

**Contract Dates:** FY 1999 N/A      FY 2000 Jan 00      FY 2001 Jan 01

**Delivery Date:** FY 1999 N/A      FY 2000 Jan 01      FY 2001 Jan 02

INDIVIDUAL MODIFICATION

Date February 2000

MODIFICATION TITLE (Cont): Battlefield Combat Identification System 1-98-05-4546

FINANCIAL PLAN: (\$ in Millions)

	FY 1998 and Prior		FY 1999		FY 2000		FY 2001		FY 2002		FY 2003		FY 2004		FY 2005		TC		TOTAL		
	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	
RDT&E																					
PROCUREMENT																					
BCIS Kits					30	1.9	40	2.6	40	2.6	40	2.6	20	1.3	8	0.5			178	11.6	
Equipment																					
Equipment, Nonrecurring																					
Engineering Change Orders																					
Data																					
Training Equipment																					
Support Equipment																					
Other																					
Interim Contractor Support																					
NOTE: Application costs are included in procurement unit cost																					
Installation of Hardware																					
FY 1998 & Prior Eqpt -- Kits																					
FY 1999 Eqpt -- Kits																					
FY 2000 Eqpt -- Kits																					
FY 2001 Eqpt -- Kits																					
FY 2002 Eqpt -- kits																					
FY 2003 Eqpt -- kits																					
FY 2004 Eqpt -- kits																					
FY 2005 Eqpt -- kits																					
TC Equip-Kits																					
Total Installment																					
Total Procurement Cost						1.9	2.6	2.6	2.6	1.3	0.5									11.6	

**INDIVIDUAL MODIFICATION**

Date February 2000

**MODIFICATION TITLE:** Armor tiles 1-84-05-4038

**MODELS OF SYSTEMS AFFECTED:** M2A2 (IFV) / M3A2 (CFV)

**DESCRIPTION / JUSTIFICATION:**

Armor Tiles are one of the High Survivability improvements to the BFVS. The tiles provide increased armor protection for shaped charge threats, including hand held heat and other classes of warheads as specified in the BFVS material need area. There are 5 configurations of tiles covering the vehicle front, sides and turret. The FY99 budget includes \$700 thousand of additional funds separately appropriated for Armor Tile.

**DEVELOPMENT STATUS / MAJOR DEVELOPMENT MILESTONES:**

	<u><b>PLANNED</b></u>	<u><b>ACCOMPLISHED</b></u>
Critical Design Review:	3Q90	3Q90
Contractor Test and Evaluation:	N/A	
Development Test and Evaluation:	N/A	
Initial Operational Test and Evaluation:	N/A	
IPR Production Decision:	2Q92	2Q93
TDP Available	N/A	

**Installation Schedule:**

Pr Yr	FY 1999				FY 2000				FY 2001				FY 2002				FY 2003			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
<b>Totals</b>																				
<b>Inputs</b>																				
<b>Outputs</b>																				

  

	FY 2004				FY 2005				FY 2006				FY 2007				To Complete	Totals
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4		
<b>Inputs</b>																		
<b>Outputs</b>																		

**METHOD OF IMPLEMENTATION:** Troop Installed ADMINISTRATIVE LEADTIME: 6 Months PRODUCTION LEADTIME: 6 Months  
 Contract Dates: FY 1999 Feb 99 FY 2000 FY 2001  
 Delivery Date: FY 1999 FY 2000 FY 2001

INDIVIDUAL MODIFICATION

Date February 2000

MODIFICATION TITLE (Cont): Armor tiles 1-84-05-4038

FINANCIAL PLAN: (\$ in Millions)

	FY 1998 and Prior		FY 1999		FY 2000		FY 2001		FY 2002		FY 2003		FY 2004		FY 2005		TC		TOTAL		
	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	
RDT&E		4.0																			4.0
PROCUREMENT																					
Kit Quantity																					
Installation Kits	246	56.5	56	14.0	70	19.0															372 89.5
Installation Kits, Nonrecurring Equipment																					
Equipment, Nonrecurring																					
Engineering Change Orders		0.5																			0.5
Data																					
Training Equipment																					
Support Equipment																					
Other		15.1		2.7		5.6															23.4
Interim Contractor Support																					
Installation of Hardware																					
FY 1998 & Prior Eqpt -- Kits																					
FY 1999 Eqpt -- Kits																					
FY 2000 Eqpt -- Kits																					
FY 2001 Eqpt -- Kits																					
FY 2002 Eqpt -- kits																					
FY 2003 Eqpt -- kits																					
FY 2004 Eqpt -- kits																					
FY 2005 Eqpt -- kits																					
TC Equip-Kits																					
Total Installment																					
Total Procurement Cost		72.1		16.7		24.6															113.5

**INDIVIDUAL MODIFICATION**

Date February 2000

**MODIFICATION TITLE:** M2A2ODS to M3A2ODS Conversion 1-99-05-4564

**MODELS OF SYSTEMS AFFECTED:** M2A2ODS, M3A2ODS

**DESCRIPTION / JUSTIFICATION:**

This modification will reconfigure M2A2ODS vehicles into the M3A2ODS configuration to include overhaul and restowage. This is required because of the realignment of Bradley assets between the Infantry Fighting Vehicle (IFV) and the Cavalry Fighting Vehicle (CFV) due to the pure fleet concept contained in the recently approved Armored Systems Modernization Plan.

**DEVELOPMENT STATUS / MAJOR DEVELOPMENT MILESTONES:**

N/A

**Installation Schedule:**

Pr Yr	FY 1999				FY 2000				FY 2001				FY 2002				FY 2003			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
<b>Totals</b>													8	24	24	24	24	24	3	4
<b>Inputs</b>														8	24	24	24	24	24	3
<b>Outputs</b>																				

  

	FY 2004				FY 2005				FY 2006				FY 2007				To Complete	Totals		
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4				
<b>Inputs</b>																				131
<b>Outputs</b>																				131

**METHOD OF IMPLEMENTATION:** Contractor ADMINISTRATIVE LEADTIME: 6 Months PRODUCTION LEADTIME: 12 Months  
 Contract Dates: FY 1999 N/A FY 2000 N/A FY 2001 Mar 01  
 Delivery Date: FY 1999 N/A FY 2000 N/A FY 2001 Mar 02

INDIVIDUAL MODIFICATION

Date

February 2000

MODIFICATION TITLE (Cont): M2A2ODS to M3A2ODS Conversion 1-99-05-4564

FINANCIAL PLAN: (\$ in Millions)

	FY 1998 and Prior		FY 1999		FY 2000		FY 2001		FY 2002		FY 2003		FY 2004		FY 2005		TC		TOTAL		
	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	
RDT&E																					
PROCUREMENT																					
Kit Quantity							69	17.1	62	18.0									131	35.0	
Installation Kits																					
Installation Kits, Nonrecurring																					
Equipment																					
Equipment, Nonrecurring																					
Engineering Change Orders																					
Data																					
Training Equipment																					
Support Equipment																					
Other																					
Interim Contractor Support																					
NOTE: Application costs are included in procurement unit cost																					
Installation of Hardware																					
FY 1998 & Prior Eqpt -- Kits																					
FY 1999 Eqpt -- Kits																					
FY 2000 Eqpt -- Kits																					
FY 2001 Eqpt -- Kits																					
FY 2002 Eqpt -- kits																					
FY 2003 Eqpt -- kits																					
FY 2004 Eqpt -- kits																					
FY 2005 Eqpt -- kits																					
TC Equip-Kits																					
Total Installment																					
Total Procurement Cost								17.1		18.0											35.0

**Exhibit P-40, Budget Item Justification Sheet**

Date: February 2000

Appropriation / Budget Activity/Serial No: PROCUREMENT OF WPNS & TRKD CMBT VEHS / 1 / Tracked Combat Vehicles  
 P-1 Item Nomenclature: HOWITZER, MED SP FT 155MM M109A6 (MOD) (GA0400)

Program Elements for Code B Items: Code: Other Related Program Elements:

	Prior Years	FY 1997	FY 1998	FY 1999	FY 2000	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	To Complete	Total Prog
Proc Qty												
Gross Cost	1223.7	100.4	74.0	11.2	26.8	8.1	5.3	13.9	20.1	4.0	0.0	1487.4
Less PY Adv Proc	16.3											16.3
Plus CY Adv Proc												
Net Proc (P-1)	1207.4	100.4	74.0	11.2	26.8	8.1	5.3	13.9	20.1	4.0	0.0	1471.1
Initial Spares	5.9	6.4	0.7									12.9
Total Proc Cost	1213.2	106.8	74.6	11.2	26.8	8.1	5.3	13.9	20.1	4.0	0.0	1484.0
Flyaway U/C												
Wpn Sys Proc U/C												

**DESCRIPTION:**  
 Funds the procurement of approved modifications to the 155MM Self-Propelled Howitzer. The fiscal program identified herein completes production and fielding of the M109A6 Paladin Howitzer.

**COOPERATIVE AGREEMENTS:**  
 The Government of the United States of America, as represented by the Department of the Army (DA), and the Government of Israel (GOI), as represented by the Ministry of Defense (MOD), agreed to cooperate on a joint development project to improve the M109 Series 155MM Self-Propelled Howitzer in November 1985. This program incorporated already developed items, together with items which were developed under contract, into prototype M109s. DA and MOD supplied their own M109s for prototype work. GOI funding for its share of the program was \$30.7 million over Fiscal Years (FY) 1986-1990. The US Howitzer is currently in the full scale production phase and has been named the M109A6 Paladin. The US/Israeli Joint Development Agreement has expired effective with the Paladin Milestone III, Full Scale Production Decision. The system developer, BMY, a Division of Harsco Corporation, was awarded a full scale engineering development contract in October 1985, and a low rate production contract in September 1990. In April 1993, FMC Corporation (now known as United Defense, Limited Partnership, Paladin Production Division) won a competitive multiyear procurement contract for full scale production of remaining Paladin requirements during FY1993-1998 programs. A FY00 contract is expected in May 2000 for a limited quantity of systems.

**Exhibit P-40M Budget Item Justification Sheet**

Date  
February 2000

Appropriation / Budget Activity/Serial No.      P-1 Item Nomenclature  
 PROCUREMENT OF WPNS & TRKD CMBT VEHS / 1 / Tracked Combat Vehicles      HOWITZER, MED SP FT 155MM M109A6 (MOD) (GA0400)

Program Elements for Code B Items      Code      Other Related Program Elements

Description		Fiscal Years									
OSIP NO.	Classification	FY 1998	FY 1999	FY 2000	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	TC	Total
Howitzer Improvement Program											
1-81-05-1002	Unclassified	1,378.3	11.2	26.8	8.1	5.3	13.9	20.1	4.0	0.0	1,467.7
Chlorofluorocarbon (CFC Elimination)											
1-96-05-1003	Unclassified	3.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	3.4
Totals		1,381.7	11.2	26.8	8.1	5.3	13.9	20.1	4.0	0.0	1,471.1

**INDIVIDUAL MODIFICATION**

Date February 2000

**MODIFICATION TITLE:** Howitzer Improvement Program 1-81-05-1002

**MODELS OF SYSTEMS AFFECTED:** Howitzer, MED SP 155MM M109 Ser (MOD)

**DESCRIPTION / JUSTIFICATION:**

The M109A6 Paladin, approved for full scale production, has been designed to upgrade the M109A2/A3 Howitzer's responsiveness, effectiveness, survivability, and Reliability, Availability, and Maintainability-Durability (RAM-D). This meets the user's urgent need for a product improved system that satisfies the deficiencies cited in these areas by the Mission Element Need Statement (MENS, approved by the Secretary of Defense in December 1980. The production phase of the program involves a combined effort between Letterkenny Army Depot and the contractor. M109A2/A3 Howitzers from CONUS and OCONUS field units are being shipped to Letterkenny Army Depot. Letterkenny removes traverse mechanism, disassembles the howitzer, reconditions turret components to be reset in the new turret, and overhauls/modifies the chassis to the Paladin configuration. The reconditioned turret components, and the overhauled/modified chassis with the new M284 Cannon and M182 Gun Mount manufactured by Watervliet and Rock Island Arsenals, respectively, are shipped to the contractor for final integration, assembly, and acceptance testing. The acquisition strategy for the FY89/90-92 called for sole source contracts. An FY93-96 competitive multiyear production contract was awarded to UDLP in April 1993. In April 1997, a contract modification was awarded to the existing multiyear production contract for an additional 37 M109A6 Paladins. An FY98 contract option for 36 vehicles was awarded in November 1997 and a FY00 contract is expected to be awarded in May 2000 for 7 additional systems.

**DEVELOPMENT STATUS / MAJOR DEVELOPMENT MILESTONES:**

The M109A6 was approved for entry into full scale development in November 1984. At that time, DA decided to modify M109A2/A3 Howitzers to a HIP configuration. It was decided to merge the Howitzer Extended Life Program (HELP) into the HIP where kits from both programs would be applied to the M109A2/A3 Howitzer. The improved 155MM Self-Propelled Howitzer was approved for Type-Classification Low Rate Production (TC-LRP) and designated the M109A6 Howitzer following a Milestone III - A ASARC on 7 February 1990. In March 1993 a Milestone III Pre-ASARC review was chaired by the Assistant Secretary of the Army for Research, Development and Acquisition, and the M109A6 Paladin was approved for Type Classification-Standard and full rate production and deployment. This Milestone III is documented in Acquisition Decision Memorandum dated 9 April 1993. The Paladin production program completed deliveries of the multi-year contract ahead of schedule. Deliveries from the FY00 contract are expected to be completed 2nd Qtr FY02.

**Installation Schedule:**

Pr Yr	FY 1999				FY 2000				FY 2001				FY 2002				FY 2003			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
<b>Inputs</b>																				
<b>Outputs</b>	950											7								
	845	45	37	23									2	5						

  

	FY 2004				FY 2005				FY 2006				FY 2007				To Complete	Totals
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4		
<b>Inputs</b>																		957
<b>Outputs</b>																		957

**METHOD OF IMPLEMENTATION:**

**ADMINISTRATIVE LEADTIME:** 24 Months

**PRODUCTION LEADTIME:** 24 Months

Contract Dates: FY 1999 Enter Date FY 2000 Enter Date FY 2001 Enter Date  
 Delivery Date: FY 1999 Enter Date FY 2000 Enter Date FY 2001 Enter Date

INDIVIDUAL MODIFICATION

Date

February 2000

MODIFICATION TITLE (Cont): Howitzer Improvement Program 1-81-05-1002

FINANCIAL PLAN: (\$ in Millions)

	FY 1998 and Prior		FY 1999		FY 2000		FY 2001		FY 2002		FY 2003		FY 2004		FY 2005		TC		TOTAL		
	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	
RDT&E		149.4						2.5		4.6											156.5
PROCUREMENT																					
Kit Quantity	950				7																957
Equipment		772.6		1.7		11.1		5.4		0.1		0.0									790.9
Equipment, Nonrecurring		244.1		1.2		0.0															245.3
Engineering Change Orders		115.0		0.1		1.5															116.6
Matrix Personnel Support		86.6		3.4		5.1															95.0
Data		13.1		0.3																	13.4
Training Equipment		14.1																			14.1
Vehicular Intercom System		10.2				1.1															11.3
Other		5.1				0.4															5.5
Project Mgmt Admin		18.0		0.7		4.1		0.6		0.0											23.4
Fielding		25.7		3.9		1.0		1.9													32.5
Battlefield Combat ID System						0.0															0.0
MACS Stowage and Handling												2.0		4.2							6.2
Battery Guard System								0.0		0.2		0.2		0.2							0.5
Laser Ignition System												5.9		6.0							11.9
Fire Control Upgrade								0.1		5.0		5.8		9.8		4.0					24.7
Installation of Hardware																					
FY 1998 & Prior Eqpt -- Kits	950	73.8																			950 73.8
FY 1999 Eqpt -- Kits																					
FY 2000 Eqpt -- Kits					7	2.5															7 2.5
FY 2001 Eqpt -- Kits																					
FY 2002 Eqpt -- kits																					
FY 2003 Eqpt -- kits																					
FY 2004 Eqpt -- kits																					
FY 2005 Eqpt -- kits																					
TC Equip-Kits																					
Total Installment	950	73.8			7	2.5															957 76.3
Total Procurement Cost		1378.3		11.2		26.8		8.1		5.3		13.9		20.1		4.0					1467.7

**INDIVIDUAL MODIFICATION**

Date February 2000

**MODIFICATION TITLE:** Chlorofluorocarbon (CFC Elimination) 1-96-05-1003

**MODELS OF SYSTEMS AFFECTED:** M109A6 Paladin Howitzer

**DESCRIPTION / JUSTIFICATION:**

References: DOD Directive 6050.0; Policy Letter 200.90-1; AMC Regulation 70-68; Montreal Protocol of 1986.  
 The previous references mandate the replacement of R-12 FREON, used in the current M109A6 Paladin's Microclimatic Conditioning System (MCS), with a non-chlorofluorocarbon (CFC) substitute.

**DEVELOPMENT STATUS / MAJOR DEVELOPMENT MILESTONES:**

Request for Proposal - 3QFY97  
 Vendor Selected - 1QFY98  
 Joint Government/Contractor Test and Evaluation - 3QFY98 and ongoing  
 IPR Production Decision/Contract Modification - 2QFY99  
 TDP Available - 2QFY99

**Installation Schedule:**

Pr Yr	FY 1999				FY 2000				FY 2001				FY 2002				FY 2003			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
<b>Totals</b>																				
<b>Inputs</b>			34	223	225	225	208	35												
<b>Outputs</b>			34	188	204	165	186	130	37	6										

  

	FY 2004				FY 2005				FY 2006				FY 2007				To Complete	Totals
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4		
<b>Inputs</b>																		950
<b>Outputs</b>																		950

**METHOD OF IMPLEMENTATION:** Field Retrofit      **ADMINISTRATIVE LEADTIME:** 24 Months      **PRODUCTION LEADTIME:** 24 Months  
**Contract Dates:** FY 1999 Enter Date      FY 2000 Enter Date      FY 2001 Enter Date  
**Delivery Date:** FY 1999 Enter Date      FY 2000 Enter Date      FY 2001 Enter Date

INDIVIDUAL MODIFICATION

Date February 2000

MODIFICATION TITLE (Cont): Chlorofluorocarbon (CFC Elimination) 1-96-05-1003

FINANCIAL PLAN: (\$ in Millions)

	FY 1998 and Prior		FY 1999		FY 2000		FY 2001		FY 2002		FY 2003		FY 2004		FY 2005		TC		TOTAL		
	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	
RDT&E																					
PROCUREMENT																					
Kit Quantity	950																			950	
Hardware		2.0																			2.0
Testing		0.2																			0.2
Project Management																					
Installation of Hardware																					
FY 1998 & Prior Eqpt -- Kits	950	1.3																		950	1.3
FY 1999 Eqpt -- Kits																					
FY 2000 Eqpt -- Kits																					
FY 2001 Eqpt -- Kits																					
FY 2002 Eqpt -- kits																					
FY 2003 Eqpt -- kits																					
FY 2004 Eqpt -- kits																					
FY 2005 Eqpt -- kits																					
TC Equip-Kits																					
Total Installment	950	1.3																		950	1.3
Total Procurement Cost		3.4																			3.4

**Exhibit P-40, Budget Item Justification Sheet**

Date:

February 2000

Appropriation / Budget Activity/Serial No:

PROCUREMENT OF WPNS & TRKD CMBT VEHS / 1 / Tracked Combat Vehicles

P-1 Item Nomenclature:

FAASV PIP TO FLEET (GA8010)

Program Elements for Code B Items:

Code:

A

Other Related Program Elements:

	Prior Years	FY 1997	FY 1998	FY 1999	FY 2000	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	To Complete	Total Prog
Proc Qty												
Gross Cost	73.0	23.5	1.8	3.1	0.2	0.0	18.4	2.1	8.4	0.1	0.0	130.6
Less PY Adv Proc												
Plus CY Adv Proc												
Net Proc (P-1)	73.0	23.5	1.8	3.1	0.2	0.0	18.4	2.1	8.4	0.1	0.0	130.6
Initial Spares												
Total Proc Cost	73.0	23.5	1.8	3.1	0.2	0.0	18.4	2.1	8.4	0.1	0.0	130.6
Flyaway U/C												
Wpn Sys Proc U/C												

**DESCRIPTION:**

Funds the procurement of approved modifications to the M992 and M992A1 Field Artillery Ammunition Support Vehicle.



**INDIVIDUAL MODIFICATION**

Date February 2000

**MODIFICATION TITLE:** FAASV Materiel Change (A2 Conversion) 1-93-05-4457

**MODELS OF SYSTEMS AFFECTED:** FAASV M992A0 and M992A1

**DESCRIPTION / JUSTIFICATION:**

The FAASV materiel change encompasses the previously approved FAASV HELP (Howitzer Extended Life Program) and Survivability Materiel Changes. The materiel change incorporates M109 Family of Vehicles improvements into the FAASV in order to maintain a common chassis. These improvements include the Low Heat Rejection/Cold Start Engine, improved XTG 411-4 Transmission, Reliability, and Maintainability (RAM) improvements to the cooling, electrical, and suspension systems, relocated heater and hydraulic reservoir, stronger fuel cell, and modifications to provide interoperability with the M109A6 Paladin Howitzer. The enhancements provided by the materiel change will permit the FAASV crew to operate in the same environment as the M109A6 Paladin. This means the operation and maintenance features will be common and the FAASV cold starting and RAM features will be comparable. The modifications to the rear door conveyor and propellant racks will improve M109A6 supportability. Funding against Depot Maintenance Pre-Modification in FY99 pays the Inspect and Repair Only As Necessary (IROAN) upgrade effort for the completion of the European Conversion Program.

**DEVELOPMENT STATUS / MAJOR DEVELOPMENT MILESTONES:**

Preliminary Design Review - 1QFY91 M992A2 First Unit Equipped - 1QFY95  
 Critical Design Review - 4QFY91  
 Contractor Test and Evaluation - 2QFY93  
 IPR Production Design - 3QFY93  
 TDP Available - 3QFY93  
 M992A2 First Delivery - 3QFY93

**Installation Schedule:**

Pr Yr	FY 1999				FY 2000				FY 2001				FY 2002				FY 2003			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
<b>Totals</b>																				
<b>Inputs</b>	757	18	14																	
<b>Outputs</b>	732	28	24	5																

  

	FY 2004				FY 2005				FY 2006				FY 2007				To Complete	Totals
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4		
<b>Inputs</b>																		789
<b>Outputs</b>																		789

**METHOD OF IMPLEMENTATION:**

**ADMINISTRATIVE LEADTIME:** 24 Months

**PRODUCTION LEADTIME:** 24 Months

Contract Dates: FY 1999 Enter Date FY 2000 Enter Date FY 2001 Enter Date  
 Delivery Date: FY 1999 Enter Date FY 2000 Enter Date FY 2001 Enter Date

INDIVIDUAL MODIFICATION

Date February 2000

MODIFICATION TITLE (Cont): FAASV Materiel Change (A2 Conversion) 1-93-05-4457

FINANCIAL PLAN: (\$ in Millions)

	FY 1998 and Prior		FY 1999		FY 2000		FY 2001		FY 2002		FY 2003		FY 2004		FY 2005		TC		TOTAL		
	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	
RDT&E																					
PROCUREMENT																					
Kit Quantity	789																			789	
Installation Kits		45.1																			45.1
Engineering Change Orders		10.3																			10.3
Project Management Admin		1.3		1.7		0.1															3.1
Testing		0.3																			0.3
Fielding Support		5.9		0.3																	6.2
Depot Maint Pre Modification				0.8																	0.8
Auxiliary Power Unit									18.2												18.2
Battlefield Combat ID System						0.1															0.1
Defense Adv GPS Receiver									0.1		0.2		0.2		0.1						0.5
Battery Guard System									0.2		0.2		0.2								0.5
MACS Stowage and Handling											1.7		3.6								5.3
Vehicular Intercom System		7.1																			7.1
Installation of Hardware																					
FY 1998 & Prior Eqpt -- Kits	789	25.5																		789	25.5
FY 1999 Eqpt -- Kits																					
FY 2000 Eqpt -- Kits																					
FY 2001 Eqpt -- Kits																					
FY 2002 Eqpt -- kits																					
FY 2003 Eqpt -- kits																					
FY 2004 Eqpt -- kits																					
FY 2005 Eqpt -- kits																					
TC Equip-Kits																					
Total Installment	789	25.5																		789	25.5
Total Procurement Cost		95.4		2.8		0.2			18.4		2.1		3.9		0.1						122.9

**INDIVIDUAL MODIFICATION**

Date February 2000

**MODIFICATION TITLE:** FAASV Halon Replacement 1-94-05-4477

**MODELS OF SYSTEMS AFFECTED:** FAASV M992A2

**DESCRIPTION / JUSTIFICATION:**

References: DOD Directive 6050.0; DA Policy Letter 200.0.1; AMC Regulation 70-68; Montreal Protocol of 1986 and Presidential Directive.

These references mandate the replacement of Halon charged fire suppression systems to prevent ozone depletion. A common replacement agent engine compartment fire extinguishing system is required on 927 FAASV systems. FY97-99 funds have been appropriated to initiate the conversion process by replacing the fire suppression distribution system in the FAASV engine compartment with one suitable to both Halon and the selected alternate agent. FY04 funds have been appropriated to swap out the Halon bottles to the selected alternate agent for 927 FAASV systems.

**DEVELOPMENT STATUS / MAJOR DEVELOPMENT MILESTONES:**

- Preliminary Design Review - 1QFY98
- Critical Design Review - 1QFY98
- Joint Government Contractor Test and Evaluation - 1QFY98
- IPR Production Decision - 4QFY98
- TDP Available - 4QFY98
- First Unit Installed - 2QFY99

**Installation Schedule:**

Pr Yr	FY 1999				FY 2000				FY 2001				FY 2002				FY 2003			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
<b>Totals</b>																				
<b>Inputs</b>		20	30	40	80	100	100	150	200	207										
<b>Outputs</b>			20	30	40	80	100	100	150	200	207									

  

	FY 2004				FY 2005				FY 2006				FY 2007				To Complete	Totals
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4		
<b>Inputs</b>																		927
<b>Outputs</b>																		927

**METHOD OF IMPLEMENTATION:**

**ADMINISTRATIVE LEADTIME:** 1 Months

**PRODUCTION LEADTIME:** 3 Months

Contract Dates: FY 1999 Enter Date FY 2000 Enter Date FY 2001 Enter Date  
 Delivery Date: FY 1999 Enter Date FY 2000 Enter Date FY 2001 Enter Date

INDIVIDUAL MODIFICATION

Date

February 2000

MODIFICATION TITLE (Cont): FAASV Halon Replacement 1-94-05-4477

FINANCIAL PLAN: (\$ in Millions)

	FY 1998 and Prior		FY 1999		FY 2000		FY 2001		FY 2002		FY 2003		FY 2004		FY 2005		TC		TOTAL		
	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	
RDT&E																					
PROCUREMENT																					
Kit A Quantity	927																		927		
Installation Kits A		1.0																			1.0
Engineering Support		0.2																			0.2
Test		0.5																			0.5
Installation Kits B													3.5								3.5
Installation of Hardware																					
FY 1998 & Prior Eqpt -- Kits	777	1.1																	777	1.1	
FY 1999 Eqpt -- Kits			150	0.3															150	0.3	
FY 2000 Eqpt -- Kits																					
FY 2001 Eqpt -- Kits																					
FY 2002 Eqpt -- kits																					
FY 2003 Eqpt -- kits																					
FY 2004 Eqpt -- kits													1.1								1.1
FY 2005 Eqpt -- kits																					
TC Equip-Kits																					
Total Installment	777	1.1	150	0.3									1.1						927	2.5	
Total Procurement Cost		2.8		0.3									4.5								7.6

**Exhibit P-40, Budget Item Justification Sheet**

Date: February 2000

Appropriation / Budget Activity/Serial No: PROCUREMENT OF WPNS & TRKD CMBT VEHS / 1 / Tracked Combat Vehicles  
 P-1 Item Nomenclature: IMPROVED RECOVERY VEHICLE (M88 MOD) (GA0570)

Program Elements for Code B Items: Code: A Other Related Program Elements:

	Prior Years	FY 1997	FY 1998	FY 1999	FY 2000	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	To Complete	Total Prog
Proc Qty	52	24	10	16		24	21		22	24		193
Gross Cost	119.5	55.5	32.0	53.6		68.4	67.8		73.1	74.2		544.1
Less PY Adv Proc												
Plus CY Adv Proc												
Net Proc (P-1)	119.5	55.5	32.0	53.6		68.4	67.8		73.1	74.2		544.1
Initial Spares	1.5	2.0				2.8	2.8		2.9	3.0		15.1
Total Proc Cost	121.0	57.5	32.0	53.6		71.2	70.6		76.0	77.2		559.2
Flyaway U/C												
Wpn Sys Proc U/C	2.3	2.3	3.2	3.3		2.8	3.2		3.3	3.1		2.8

**DESCRIPTION:** The M88A2 HERCULES is an armored, full-tracked, diesel-powered, recovery vehicle configured with an A-frame boom, three winches, and a spade. The boom has a 35 ton lift capacity and the main winch has a constant pull capacity of 70 tons. The hull is armored for protection against small arms fire, artillery fragments and anti-personnel mines. The vehicle mounts a caliber .50 machine gun for self-protection. The M88A2 HERCULES is capable of performing recovery, evacuation, and limited repair of the main battle tank.

**JUSTIFICATION:** The FY01 funding will be used to produce 24 M88A2 HERCULES utilizing the existing M88A1 chassis as the base vehicle and increasing the horsepower, braking/steering, winch, lift and suspension characteristics which will allow the safe recovery of Abrams tanks. The fielded M88A1 lacks the necessary horsepower and braking to safely support the recovery of the Abrams fleet. Improvements incorporated into HERCULES fix these operational shortcomings. In addition, the increased winching and lifting capability accommodate all Abrams tank models including the 70-ton M1A2. Without the improvements incorporated in the HERCULES, units must use two or three recovery vehicles (or another Abrams to tow a disabled tank) to perform the spectrum of recovery missions.

<b>Exhibit P-5, Weapon WTCV Cost Analysis</b>		Appropriation/ Budget Activity/Serial No: PROCUREMENT OF WPNS & TRKD CMBT VEHS / 1 / Tracked Combat Vehicles			P-1 Line Item Nomenclature: IMPROVED RECOVERY VEHICLE (M88 MOD) (GA0570)			Weapon System Type:			Date: February 2000		
<b>Cost Elements</b>	ID CD	<b>FY 98</b>			<b>FY 99</b>			<b>FY 00</b>			<b>FY 01</b>		
		TotalCost \$000	Qty Each	UnitCost \$000	TotalCost \$000	Qty Each	UnitCost \$000	TotalCost \$000	Qty Each	UnitCost \$000	TotalCost \$000	Qty Each	UnitCost \$000
1. Vehicle Manufacturing - Contractor	A				30648	16	1916				47936	24	1997
2. Vehicle Manufacturing - GFE					2098	*16	VAR				3002	*24	VAR
3. Contractor Engineering					4402						3269		
4. Engineering Change Orders											1460		
5. Project Management - Core					3036						1665		
6. Project Management - OGA					2203						1167		
7. Transportation					45						59		
8. Fielding					2562						1136		
9. Testing					345						751		
10. Depot Maintenance - Premodification					1007						2092		
11. Fleet Retrofit (Block I & II ECP's)					5342								
12. Track and Cleat ECP											5848		
13. Depot Maintenance Work Requirements					1900								
<b>TOTAL</b>					<b>53588</b>						<b>68385</b>		

### Exhibit P-5a, Budget Procurement History and Planning

Date: February 2000

Appropriation / Budget Activity/Serial No: PROCUREMENT OF WPNS & TRKD CMBT VEHS / 1 / Tracked Combat Vehicles				Weapon System Type:		P-1 Line Item Nomenclature: IMPROVED RECOVERY VEHICLE (M88 MOD) (GA0570)					
WBS Cost Elements: Fiscal Years	Contractor and Location	Contract Method and Type	Location of PCO	Award Date	Date of First Delivery	QTY Each	Unit Cost \$000	Specs Avail Now?	Date Revsn Avail	RFP Issue Date	
1. Vehicle Manufacturing - Contractor FY 99	UDLP (1)	SS-FFP	TACOM	Nov-98 {2}	Feb-00	16	1916	YES		Sep 98	
FY 01	UDLP (1)	SS-FFP	TACOM	Nov-00 {3}	Feb-02	24	1997	YES		Sep 00	
2. Vehicle Manufacturing - GFE FY 99	Various	Reqn/PO	Various	Various		16	VAR	YES			
FY 01	Various	Reqn/PO	Various	Various		24	VAR	YES			

**REMARKS:**

- (1) UDLP - United Defense Limited Partnership
- (2) A contract was awarded November 1998 for Long Lead Material to accelerate the FY99 deliveries and mitigate a production break. Production contract was awarded March 1999.
- (3) A contract will be awarded November 2000 for Long Lead Material to accelerate the FY01 followed by a production contract award February 2001.







**Exhibit P-40, Budget Item Justification Sheet**

Date: February 2000

Appropriation / Budget Activity/Serial No: PROCUREMENT OF WPNS & TRKD CMBT VEHS / 1 / Tracked Combat Vehicles  
 P-1 Item Nomenclature: BREACHER SYSTEM (MOD) (GZ3200)

Program Elements for Code B Items: 0604649A  
 Code: B  
 Other Related Program Elements:

	Prior Years	FY 1997	FY 1998	FY 1999	FY 2000	FY 2001	FY2002	FY 2003	FY 2004	FY 2005	To Complete	Total Prog
Proc Qty												
Gross Cost	0.0	0.0	0.0	0.0	19.5	0.0	0.0	0.0	0.0	0.0	0.0	19.5
Less PY Adv Proc												
Plus CY Adv Proc												
Net Proc (P-1)	0.0	0.0	0.0	0.0	19.5	0.0	0.0	0.0	0.0	0.0	0.0	19.5
Initial Spares												
Total Proc Cost	0.0	0.0	0.0	0.0	19.5	0.0	0.0	0.0	0.0	0.0	0.0	19.5
Flyaway U/C												
Wpn Sys Proc U/C												

**DESCRIPTION:** The Grizzly (M1 Breacher) is developed around the M-1 Abrams tank chassis and integrated a versatile/survivable full-width mine clearing blade with automatic depth control, a power driven arm to reduce complex obstacles, and an armored commander's control station. The Grizzly provides the Combat Engineer with significantly improved mission effectiveness and crew/vehicle survivability while clearing minefields and removing complex natural and man-made obstacles at the forward edge of the battlefield. The Grizzly is capable of moving with, and as survivable as, the force it supports. It provides the maneuver force with the freedom required to successfully execute assigned ground combat mission requirements.

**JUSTIFICATION:** During Operation Desert Storm, it became evident that the Army did not have one vehicle capable of performing an in-stride, complex linear obstacle breach. The Grizzly was to provide a critical resource for executing in-stride breaches, supporting the Force XXI maneuver commander's goals of information and maneuver dominance on the battlefield. The Grizzly, a single, survivable breach platform, gives the Combat Engineer a capability that does not currently exist in today's complex obstacle breaching operations. All existing counterobstacle and countermine systems are single purpose only, and lack the mobility, protection and agility of the current maneuver force. The Grizzly possesses a complex obstacle reducing capability, with mobility, protection, and agility comparable to the M-1 Abrams Tank.

The Grizzly program has been terminated. The decision to terminate the program was based on an assessment of affordability and acceptance of operational risk against higher Army transformation priorities.

<b>Exhibit P-5, Weapon WTCV Cost Analysis</b>		Appropriation/ Budget Activity/Serial No: PROCUREMENT OF WPNS & TRKD CMBT VEHS / 1 / Tracked Combat Vehicles			P-1 Line Item Nomenclature: BREACHER SYSTEM (MOD) (GZ3200)			Weapon System Type:			Date: February 2000		
<b>Cost Elements</b>	ID CD	<b>FY 98</b>			<b>FY 99</b>			<b>FY00</b>			<b>FY 01</b>		
		TotalCost	Qty	UnitCost	TotalCost	Qty	UnitCost	TotalCost	Qty	UnitCost	TotalCost	Qty	UnitCost
		\$000	Each	\$000	\$000	Each	\$000	\$000	Each	\$000	\$000	Each	\$000
1. Vehicle Manufacturing - Contractor	B												
2. Vehicle Manufacturing - ANAD													
3. Vehicle Manufacturing - GFE													
4. System Technical Support													
5. Engineering Change Orders													
6. Project Management Admin - Core													
7. Project Management Admin - OGA													
8. System Test & Evaluation													
9. Initial Production Facilities								19513					
10. Fielding													
11. Interim Transportation													
12. Support Equipment													
TOTAL								19513					
Note: FY00 program is being reassessed in light of the Army's transformation.													

## Exhibit P-5a, Budget Procurement History and Planning

Date: February 2000

Appropriation / Budget Activity/Serial No:  
 PROCUREMENT OF WPNS & TRKD CMBT VEHS / 1 / Tracked  
 Combat Vehicles

Weapon System Type:

P-1 Line Item Nomenclature:  
 BREACHER SYSTEM (MOD) (GZ3200)

WBS Cost Elements: Fiscal Years	Contractor and Location	Contract Method and Type	Location of PCO	Award Date	Date of First Delivery	QTY Each	Unit Cost \$OOO	Specs Avail Now?	Date Revsn Avail	RFP Issue Date
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1. Initial Production Facilities*										
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**REMARKS:**

Note: Funding planned for Initial Production Facilities in FY2000 will be adjusted to reflect the Army's transformation.

**Exhibit P-40, Budget Item Justification Sheet**

Date: February 2000

Appropriation / Budget Activity/Serial No: PROCUREMENT OF WPNS & TRKD CMBT VEHS / 1 / Tracked Combat Vehicles  
 P-1 Item Nomenclature: HEAVY ASSAULT BRIDGE (HAB) SYS (MOD) (GZ3250)

Program Elements for Code B Items: 64649  
 Code: B  
 Other Related Program Elements:

	Prior Years	FY 1997	FY 1998	FY 1999	FY 2000	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	To Complete	Total Prog
Proc Qty	2	6	6	6								20
Gross Cost	14.6	51.4	40.4	50.0	81.9							238.3
Less PY Adv Proc												
Plus CY Adv Proc												
Net Proc (P-1)	14.6	51.4	40.4	50.0	81.9							238.3
Initial Spares			0.9	0.9	1.3							3.1
Total Proc Cost	14.6	51.4	41.3	50.8	83.2	0.0	0.0	0.0	0.0	0.0	0.0	241.3
Flyaway U/C												
Wpn Sys Proc U/C	7.3	8.6	6.7	8.3								7.8

**DESCRIPTION:** The Wolverine (Heavy Assault Bridge) is a 26 meter (79 feet) Military Load Class 70 bridge transported on a modified M1A2 System Enhancement Package (SEP) Abrams Tank chassis. The bridge is capable of spanning gaps up to 24 meters on both prepared and unprepared abutments and can be placed on a bearing surface over its entire length. It is launched under armor within five minutes and can be retrieved, from either end, in less than ten minutes. The Wolverine is operated by a crew of two soldiers and will be employed by Combat Engineer units in both offensive and defensive combined arms operations. Its mission is to provide gap crossing capability for heavy maneuver forces. It will support the Abrams Tank System and the Bradley Fighting Vehicle and is compatible with these systems in mobility and survivability.

**JUSTIFICATION:** Operation Desert Storm illustrated that current Army bridging systems were lacking the mobility of the heavy maneuver force, gap spanning capability and required increased load capacity. The Wolverine replaces the Armored Vehicle Launched Bridge (AVLB) providing increased worldwide gap crossing capabilities, increased load capacity to support Military Load Class 70 vehicles and improved mobility, survivability, and logistics supportability. The Wolverine ensures the Brigade Combat Team's freedom of maneuver.

The Wolverine program has been terminated. The decision to terminate the program was based on an assessment of affordability and acceptance of operational risk against higher Army transformation priorities.

<b>Exhibit P-5, Weapon WTCV Cost Analysis</b>		Appropriation/ Budget Activity/Serial No: PROCUREMENT OF WPNS & TRKD CMBT VEHS / 1 / Tracked Combat Vehicles			P-1 Line Item Nomenclature: HEAVY ASSAULT BRIDGE (HAB) SYS (MOD) (GZ3250)			Weapon System Type:			Date: February 2000		
<b>Cost Elements</b>	ID CD	<b>FY 98</b>			<b>FY 99</b>			<b>FY 00</b>			<b>FY 01</b>		
		TotalCost \$000	Qty Each	UnitCost \$000	TotalCost \$000	Qty Each	UnitCost \$000	TotalCost \$000	Qty Each	UnitCost \$000	TotalCost \$000	Qty Each	UnitCost \$000
1. Vehicle Manufacturing - Contractor	B				24218	6	4036						
2. Vehicle Manufacturing - ANAD					782	6	130						
3. Vehicle Manufacturing - GFE					3351	6	559						
4. Contract Engineering					18507								
5. Engineering Change Orders													
6. Project Mgmt Admin - Core					1134								
7. Project Mgmt Admin - OGA					1678								
8. New Equipment Training													
9. Total Package Fielding													
10. Transportation					308								
11. Modifications													
12. Program Closeout TBD								81901					
<b>TOTAL</b>					<b>49978</b>			<b>81901</b>					
FY00 program is being reassessed in light of the Army's transformation.													

### Exhibit P-5a, Budget Procurement History and Planning

Date: February 2000

Appropriation / Budget Activity/Serial No: PROCUREMENT OF WPNS & TRKD CMBT VEHS / 1 / Tracked Combat Vehicles		Weapon System Type:			P-1 Line Item Nomenclature: HEAVY ASSAULT BRIDGE (HAB) SYS (MOD) (GZ3250)					
WBS Cost Elements: Fiscal Years	Contractor and Location	Contract Method and Type	Location of PCO	Award Date	Date of First Delivery	QTY Each	Unit Cost \$000	Specs Avail Now?	Date Revsn Avail	RFP Issue Date
1. Vehicle Manufacturing - Contractor FY 99	General Dynamics Land Systems Lima, Ohio	SS-FFP M2 (2)	TACOM	Dec-98	May-00	6	4036	YES		Aug 97
2. Vehicle Manufacturing - ANAD FY 99	Anniston Army Depot Anniston, Alabama					6	130			
3. Vehicle Manufacturing - GFE FY 99	Government Furnished Equipment- Various					6	559			

REMARKS: FY00 program is being assessed in light of the Army's transformation.





**Exhibit P-40, Budget Item Justification Sheet**

Date:

February 2000

Appropriation / Budget Activity/Serial No:

PROCUREMENT OF WPNS & TRKD CMBT VEHS / 1 / Tracked Combat Vehicles

P-1 Item Nomenclature:

ARMORED VEH LAUNCH BRIDGE (AVLB) (MOD) (GZ3000)

Program Elements for Code B Items:

Code:

A

Other Related Program Elements:

	Prior Years	FY 1997	FY 1998	FY 1999	FY 2000	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	To Complete	Total Prog
Proc Qty												
Gross Cost	146.2	0.0	0.0	1.0	1.4	1.7	0.0	0.0	0.0	0.0	0.0	150.3
Less PY Adv Proc												
Plus CY Adv Proc												
Net Proc (P-1)	146.2	0.0	0.0	1.0	1.4	1.7	0.0	0.0	0.0	0.0	0.0	150.3
Initial Spares												
Total Proc Cost	146.2	0.0	0.0	1.0	1.4	1.7	0.0	0.0	0.0	0.0	0.0	150.3
Flyaway U/C												
Wpn Sys Proc U/C												

DESCRIPTION: The Armored Vehicle Launched Bridge (AVLB) is the current authorized standard assault bridge supporting heavy forces. AVLBS are primarily assigned to Combat Engineer and Training Units, and War Reserve sites. The AVLB is rapidly becoming unsupportable and not in a common configuration.

**JUSTIFICATION:**

AVLB COMMON CHASSI MOD: To complete the application of 7 each Modification Work Orders (MWOs), 87 vehicles (18% of the Active Component and high priority War Reserve units) need one or more modifications. The Armored Top Loading Air Cleaner and Air Induction System Improvements (Clean Air) will improve the reliability and extend engine life. The AN/VVS-2 Driver's Night Viewer (DNV) enhances tactical night operations. The Smoke Grenade Launcher allows the AVLB to maneuver under cover of obscuring smoke in a tactical environment. The new vision cupola and security locking device improves closed hatch vision and vehicle security. The engine smoke generating system provides a second source of obscuring smoke in a tactical environment. These vehicle modifications are required on AVLBS to bring the vehicles up to the current supportable configuration.

**Exhibit P-40M Budget Item Justification Sheet**

Date  
February 2000

Appropriation / Budget Activity/Serial No.      P-1 Item Nomenclature  
 PROCUREMENT OF WPNS & TRKD CMBT VEHS / 1 / Tracked Combat Vehicles      ARMORED VEH LAUNCH BRIDGE (AVLB) (MOD) (GZ3000)

Program Elements for Code B Items      Code      Other Related Program Elements

Description		Fiscal Years									
OSIP NO.	Classification	FY 1998	FY 1999	FY 2000	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	TC	Total
AVLB Block Mod (No P3a Set)											
1-97-05-4531	Oper Capability	146.2	1.0	1.2	1.7	0.0	0.0	0.0	0.0	0.0	150.1
Battlefield Combat Identification Systems (No P3a Set)											
0-00-00-0000	Oper Capability	0.0	0.0	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.2
Totals		146.2	1.0	1.4	1.7	0.0	0.0	0.0	0.0	0.0	150.3

**Exhibit P-40, Budget Item Justification Sheet**

Date: February 2000

Appropriation / Budget Activity/Serial No: PROCUREMENT OF WPNS & TRKD CMBT VEHS / / P-1 Item Nomenclature: ARMORED VEHICLE LAUNCH BRIDGE SLEP (GZ3050)

Program Elements for Code B Items: Code: Other Related Program Elements:

	Prior Years	FY 1997	FY 1998	FY 1999	FY 2000	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	To Complete	Total Prog
Proc Qty												
Gross Cost	0.0	0.0	0.0	0.0	0.0	15.3	14.9	69.5	73.0	62.8	0.0	235.5
Less PY Adv Proc												
Plus CY Adv Proc												
Net Proc (P-1)	0.0	0.0	0.0	0.0	0.0	15.3	14.9	69.5	73.0	62.8	0.0	235.5
Initial Spares												
Total Proc Cost	0.0	0.0	0.0	0.0	0.0	15.3	14.9	69.5	73.0	62.8	0.0	235.5
Flyaway U/C												
Wpn Sys Proc U/C												

**DESCRIPTION:** Service Life Extension Program (SLEP) applies upgrades to the Armored Vehicle Launch Bridge (AVLB) hydraulic, electrical and suspension chassis systems. It also upgrades the bridge from Military Load Class (MLC) 60 to MLC 70. The MLC 70 bridge is required to safely cross the current combat fleet weighing between 60 and 70 tons. The AVLB SLEP upgrades and updates the obsolete 1950's technology and eliminates associated supply and obsolescence issues. It improves reliability and logistics supportability by incorporating current proven technology and commercial parts. This SLEP is fundamental to improve AVLB operational readiness rates, control fleet Operations and Support (O&S) costs, and insure that AVLB remains a relevant part of the Force XXI.

**JUSTIFICATION:** Termination of the M104 Wolverine Heavy Assault Bridge leaves the 36 year old AVLBs as the Army's only and highest priority assault bridging system. The AVLB, which has never had a major upgrade, will be the Army's After Next first line assault bridging system. This SLEP extends the service life of the AVLB by making major subsystems supportable for the next 20 years of service. It also provides the capability for MLC 70 combat vehicles (Abrams Tanks and HERCULES) to safely cross at full span. The hydraulic and electrical upgrade is expected to reduce future O&S costs by 50 percent. The current 85 percent AVLB readiness rate is expected to be improved to an average of 90 percent.

Exhibit P-5, Weapon WTCV Cost Analysis		Appropriation/ Budget Activity/Serial No: PROCUREMENT OF WPNS & TRKD CMBT VEHS / /			P-1 Line Item Nomenclature: ARMORED VEHICLE LAUNCH BRIDGE SLEP (GZ3050)			Weapon System Type:			Date: February 2000		
Cost Elements	ID CD	FY 98			FY 99			FY 00			FY 01		
		TotalCost	Qty	UnitCost	TotalCost	Qty	UnitCost	TotalCost	Qty	UnitCost	TotalCost	Qty	UnitCost
		\$000	Each	\$000	\$000	Each	\$000	\$000	Each	\$000	\$000	Each	\$000
Chassis SLEP - Nonrecurring											5461	2	2731
Bridge Upgrade											8198	37	222
System Technical Support - Contractor											422		
Technical Support - Government											1171		
<b>TOTAL</b>											15252		

### Exhibit P-5a, Budget Procurement History and Planning

Date: February 2000

Appropriation / Budget Activity/Serial No: PROCUREMENT OF WPNS & TRKD CMBT VEHS / /		Weapon System Type:			P-1 Line Item Nomenclature: ARMORED VEHICLE LAUNCH BRIDGE SLEP (GZ3050)					
WBS Cost Elements: Fiscal Years	Contractor and Location	Contract Method and Type	Location of PCO	Award Date	Date of First Delivery	QTY Each	Unit Cost \$000	Specs Avail Now?	Date Revsn Avail	RFP Issue Date
HARDWARE FY01: Chassis FY01: Bridge Upgrade	TBS TBS	C/FP C/FP	TACOM TACOM	Jan-01 Jan-01	Nov-01 Nov-01	2 37	2731 222	YES YES	Jun-02 Jun-02	Oct 00 Oct 00

**REMARKS:** We will award two units in FY01 to be used for testing, functional evaluation and validation/verification. Upgrade of the two units will be done in May 02.





**Exhibit P-40, Budget Item Justification Sheet**

Date: February 2000

Appropriation / Budget Activity/Serial No: PROCUREMENT OF WPNS & TRKD CMBT VEHS / 1 / Tracked Combat Vehicles	P-1 Item Nomenclature: M1 ABRAMS TANK (MOD) (GA0700)
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Program Elements for Code B Items:	Code:	Other Related Program Elements:
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	Prior Years	FY 1997	FY 1998	FY 1999	FY 2000	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	To Complete	Total Prog
Proc Qty												
Gross Cost	528.7	62.9	18.6	26.0	31.6	36.1	170.9	32.1	405.0	391.2	4131.8	5835.0
Less PY Adv Proc												
Plus CY Adv Proc												
Net Proc (P-1)	528.7	62.9	18.6	26.0	31.6	36.1	170.9	32.1	405.0	391.2	4131.8	5835.0
Initial Spares												
Total Proc Cost	528.7	62.9	18.6	26.0	31.6	36.1	170.9	32.1	405.0	391.2	4131.8	5835.0
Flyaway U/C												
Wpn Sys Proc U/C												

**DESCRIPTION:** This budget line provides for the procurement and installation of modification kits for the Abrams series tank to improve Lethality, Survivability, Safety and Operational Capabilities. Tank Lethality is being improved by the FBCB2 Upgrades. Tank Survivability and Safety improvements include Block G (Manual Blaster, Driver's / Loader's Hatch Ballistic Rims, Automatic Fire Extinguisher System (AFES) Wiring Harness Guard, Driver's Hatch Latch, Ammo Door Latch Mechanism, Smoke Generator Fuel Line, Improved Gunner's Station, Driver's Viewer Quick Release (DVQR), and Battlefield Override); NBC Fire Warning System (NBCFW); new Hand - Held Fire Extinguishers (HHFE); Eyesafe Laser Rangefinder (ESLRF) and Driver's Hatch Interlock (DHI). Tank Operational improvements include the Re-engine; Electronic Obsolescence; Battlefield Combat Identification system (BCIS); Precision Lightweight GPS Receiver (PLGR); Pulse - Jet System (PJS); Vehicle Intercommunications System (VIS); External Auxiliary Power Unit (EAPU); M1A2 Field Upgrades, the M1A1-D (Digitization) program; and the DU Armor and Improved Turret Side Armor programs. Finally, there is the Presidentially directed HALON Replacement program (Ozone Depleting Chemical Replacement).

**JUSTIFICATION:** The priorities noted here in are consistent with USA Armor School requirements and are structured to meet needs validated by tank users in training and testing as well as in actions such as Operation Desert Storm (ODS). Degradation of tank warfighting capability and survivability, increased incidents of vehicle damage and crew injuries will occur if these modifications are delayed or deleted.

**Exhibit P-40M Budget Item Justification Sheet**

Date  
February 2000

Appropriation / Budget Activity/Serial No. PROCUREMENT OF WPNS & TRKD CMBT VEHS / 1 / Tracked Combat Vehicles  
P-1 Item Nomenclature M1 ABRAMS TANK (MOD) (GA0700)

Program Elements for Code B Items Code Other Related Program Elements

Description		Fiscal Years									
OSIP NO.	Classification	FY 1998	FY 1999	FY 2000	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	TC	Total
Halon Replacement (HAR) [MOD 1]											
1-92-05-4411	Environmental	9.5	0.3	0.0	0.6	1.0	1.0	1.0	1.0	38.4	52.8
Driver's Hatch Interlock (DHI) [Mod 2]											
1-97-05-4520	Safety	20.5	2.7	0.3	1.3	1.4	4.1	5.2	5.3	13.2	54.0
Vehicle Intercommunications System (VIS) [MOD 3]											
1-92-05-4412	Legislative Compl.	40.4	11.3	3.0	0.0	0.0	0.0	0.0	0.0	0.0	54.7
Battlefield Combat I.D. System (BCIS) [MOD 4]											
1-98-05-4543	Operational	0.0	0.0	2.0	3.1	3.0	3.0	3.0	1.4	171.9	187.4
Precision Lightweight GPS Receiver (PLGR) [MOD 5]											
1-92-05-4417	Manprint	0.6	0.5	0.4	0.4	0.4	0.4	0.4	0.5	14.1	17.7
Block G Mods [MOD 6]											
1-99-05-4554	Deficiency Correction	47.2	2.0	5.5	2.2	2.5	2.6	2.5	2.5	8.4	75.4
Pulse - Jet System (PJS) [MOD 7]											
1-92-05-4475	Operational	38.7	2.4	1.2	0.0	0.0	0.0	0.0	0.0	295.1	337.4
FBCB2 Upgrades [MOD 8]											
1-96-05-4516	Operational	0.0	0.0	0.0	7.7	4.2	2.8	1.1	5.0	56.2	77.0
External Auxiliary Pwr Unit (EAPU) [MOD 9]											
1-85-05-4057	Operational	58.3	1.4	0.0	0.0	0.0	0.0	0.0	0.0	39.9	99.6
NBC Fire Warning (NBCFW) [MOD 10]											
1-97-05-4524	Safety	0.0	0.5	1.3	1.5	1.5	1.5	1.5	1.6	4.0	13.4
Hand-Held Fire Extinguisher (HHFE) [MOD 11]											
1-97-05-4525	Safety	0.0	0.0	0.0	2.0	0.0	0.0	0.0	0.0	0.0	2.0
M1A2 Field Mods (A2FM) [MOD 12]											
1-97-05-4534	Deficiency Correction	2.1	0.8	0.9	1.0	0.9	1.0	1.4	1.2	3.3	12.6

**Exhibit P-40M Budget Item Justification Sheet**

Date  
February 2000

Appropriation / Budget Activity/Serial No.		P-1 Item Nomenclature									
PROCUREMENT OF WPNS & TRKD CMBT VEHS / 1 / Tracked Combat Vehicles		M1 ABRAMS TANK (MOD) (GA0700)									
Program Elements for Code B Items		Code	Other Related Program Elements								
Description		Fiscal Years									
OSIP NO.	Classification	FY 1998	FY 1999	FY 2000	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	TC	Total
Matrix Support (MXSP) [MOD 13]											
OSIP NO 14	Operational	1.4	0.6	0.6	0.6	0.6	0.6	0.6	0.6	116.8	122.4
DU Armor [MOD 14]											
1-98-05-4545	Operational	0.0	0.0	0.0	0.0	0.0	0.0	95.3	62.6	659.0	816.9
Improved Turret Side Armor [MOD 15]											
1-99-05-4555	Operational	0.0	0.0	0.0	1.7	3.0	4.4	4.9	4.6	137.5	156.1
Eyesafe LASER Rangefinder [MOD 16]											
1-99-05-4563	Safety	0.0	0.0	0.0	5.1	5.0	4.7	4.8	5.1	115.9	140.6
M1A1-D {Digitized} [MOD 17]											
1-98-05-4542	Operational	4.8	3.5	16.4	0.0	0.0	0.0	0.0	0.0	0.0	24.7
Re-Power [MOD 18]											
1-00-05-0014	Operational	0.0	0.0	0.0	0.0	123.9	0.0	237.8	237.2	1,082.0	1,680.9
Electronic Obsolescence [MOD 19]											
1-00-05-0015	Operational	0.0	0.0	0.0	8.9	23.5	6.0	45.5	62.6	1,376.1	1,522.6
<b>Totals</b>		<b>223.6</b>	<b>26.0</b>	<b>31.6</b>	<b>36.1</b>	<b>170.9</b>	<b>32.1</b>	<b>405.0</b>	<b>391.2</b>	<b>4,131.8</b>	<b>5,448.3</b>

**INDIVIDUAL MODIFICATION**

Date February 2000

**MODIFICATION TITLE:** Halon Replacement (HAR) [MOD 1] 1-92-05-4411

**MODELS OF SYSTEMS AFFECTED:** M1 = 0, IPM1 = 818, M1A1 = 4327, M1A2 = 747 TOTAL = 5892

**DESCRIPTION / JUSTIFICATION:**

This Modification changes the engine compartment fire suppression system in all models of the Abrams tank. This retrofit involves the substitution of a dry powder fire suppressant for the Halon 1301 gas currently used. This requirement was mandated by the 1988 Montreal Protocol in which 93 countries including the U.S.A. agreed to phase out Ozone Depleting Chemicals [ODC's] including the Halon 1301 used in the Abrams Tank Engine Compartment [Halon 1301 remains authorized for the Abrams Crew Compartment due to survivability concerns]. See 1992 DOD directive 6050.9 which establishes the policy on ODC's for the Armed Forces and DA letter 200/9 which implements that policy within the U.S. Army.

**DEVELOPMENT STATUS / MAJOR DEVELOPMENT MILESTONES:**

**PLANNED**

**ACCOMPLISHED**

Preliminary Design Review	- - - - -	1Q93	1Q93
Critical Design Review	- - - - -	1Q94	3Q94
Contractor Test & Eval.	- - - - -	2Q96	2Q96
Development Test & Eval.	- - - - -	3Q96	4Q96
Initial Operational Test & Eval.	- - - - -	2Q97	3Q97
IPR Production Decision	- - - - -	4Q97	4Q97
Tech. Data Package Available	- - - - -	3Q00	

**Installation Schedule:**

Pr Yr	FY 1999				FY 2000				FY 2001				FY 2002				FY 2003			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
<b>Totals</b>										50	50	51	38	38	39	40	41	41	41	42
<b>Inputs</b>														50	50	51	38	38	39	40
<b>Outputs</b>																				

  

	FY 2004				FY 2005				FY 2006				FY 2007				To Complete	Totals
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4		
<b>Inputs</b>	41	41	41	41	40	40	41	41									5095	5892
<b>Outputs</b>	41	41	41	42	41	41	41	41									5257	5892

**METHOD OF IMPLEMENTATION:** Contractor Team      **ADMINISTRATIVE LEADTIME:** 3 Months      **PRODUCTION LEADTIME:** 4 Months

Contract Dates:                      FY 1999      N/A                      FY 2000      N/A                      FY 2001      MAR 01  
 Delivery Date:                      FY 1999      N/A                      FY 2000      N/A                      FY 2001      OCT 01

INDIVIDUAL MODIFICATION

Date

February 2000

MODIFICATION TITLE (Cont): Halon Replacement (HAR) [MOD 1] 1-92-05-4411

FINANCIAL PLAN: (\$ in Millions)

	FY 1998 and Prior		FY 1999		FY 2000		FY 2001		FY 2002		FY 2003		FY 2004		FY 2005		TC		TOTAL	
	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$
RDT&E																				
PROCUREMENT																				
Kit Quantity							151		155		165		164		162		5095		5892	
Installation Kits																				
Installation Kits, Nonrecurring																				
Equipment							0.6		0.6		0.6		0.6		0.6		22.6		25.6	
Equipment, Nonrecurring																				
Engineering Change Orders																				
Engr. & Source Selection	9.5		0.3																	9.8
Training Equipment																				
Support Equipment																				
Other																				
Interim Contractor Support																				
Installation of Hardware																				
FY 1998 & Prior Eqpt -- Kits																				
FY 1999 Eqpt -- Kits																				
FY 2000 Eqpt -- Kits																				
FY 2001 Eqpt -- Kits																				
FY 2002 Eqpt -- kits								151	0.4										151	0.4
FY 2003 Eqpt -- kits										155	0.4								155	0.4
FY 2004 Eqpt -- kits												165	0.4						165	0.4
FY 2005 Eqpt -- kits														164	0.4				164	0.4
TC Equip-Kits																	5257	15.8	5257	15.8
Total Installment									151	0.4	155	0.4	165	0.4	164	0.4	5257	15.8	5892	17.4
Total Procurement Cost	9.5		0.3				0.6		1.0		1.0		1.0		1.0		38.4		52.8	

**INDIVIDUAL MODIFICATION**

Date February 2000

**MODIFICATION TITLE:** Driver's Hatch Interlock (DHI) [Mod 2] 1-97-05-4520

**MODELS OF SYSTEMS AFFECTED** M1 = 0 , IPM1 = 818 , M1A1 = 4327 , M1A2 = 435 TOTAL RQMT = 5580

**DESCRIPTION / JUSTIFICATION:**

The Driver's Hatch Interlock (DHI) is a SAFETY modification which provides an electronic interface between the Driver's Hatch and the Turret Drive (Rotation) controls. Its purpose is to preclude turret rotation while the driver's hatch is open. In the recent past there have been several accidents in the field where the driver has been injured or killed by inadvertently extending his head outside the hatch while the turret was being rotated. The DHI will assure that similar incidents will not occur in the future.

**DEVELOPMENT STATUS / MAJOR DEVELOPMENT MILESTONES:**

**PLANNED**

**ACCOMPLISHED**

Preliminary Design Review	-	-	-	-	2Q96	2Q96
Critical Design Review	-	-	-	-	3Q96	3Q96
Development Test & Eval.	-	-	-	-	4Q96	4Q96
IPR Production Decision	-	-	-	-	4Q97	4Q97
ECP Completed	-	-	-	-	1Q98	1Q98
Tech. Data Package Available	-	-	-	-	1Q98	2Q98

**Installation Schedule:**

Pr Yr	FY 1999				FY 2000				FY 2001				FY 2002				FY 2003				
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	
<b>Inputs</b>	435	252	253	253	253	26	27	27	27	123	123	124	125	123	123	124	125	123	123	124	125
<b>Outputs</b>	435	252	253	253	253	26	27	27	27	123	123	124	125	123	123	124	125	123	123	124	125

	FY 2004				FY 2005				FY 2006				FY 2007				To Complete	Totals
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4		
<b>Inputs</b>	123	123	124	125	123	123	124	125									1552	5580
<b>Outputs</b>	123	123	124	125	123	123	124	125									1552	5580

**METHOD OF IMPLEMENTATION:** Contractor Teams      **ADMINISTRATIVE LEADTIME:** 2 Months      **PRODUCTION LEADTIME:** 4 Months

**Contract Dates:** FY 1999 N/A      FY 2000 N/A      FY 2001 MAR 01

**Delivery Date:** FY 1999 N/A      FY 2000 N/A      FY 2001 JUL 01

INDIVIDUAL MODIFICATION

Date

February 2000

MODIFICATION TITLE (Cont): Driver's Hatch Interlock (DHI) [Mod 2] 1-97-05-4520

FINANCIAL PLAN: (\$ in Millions)

	FY 1998 and Prior		FY 1999		FY 2000		FY 2001		FY 2002		FY 2003		FY 2004		FY 2005		TC		TOTAL		
	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	
RDT&E																					
PROCUREMENT																					
Kit Quantity	3173										360		495		495		1057			5580	
Installation Kits																					
Installation Kits, Nonrecurring																					
Equipment		19.4										2.7		3.8		3.9		8.5		38.3	
Equipment, Nonrecurring																					
Engineering Change Orders																					
Testing																					
Training Equipment		0.1																			0.1
Support Equipment																					
Other																					
Interim Contractor Support																					
Installation of Hardware																					
FY 1998 & Prior Eqpt -- Kits	435	1.0																		435	1.0
FY 1999 Eqpt -- Kits			1011	2.7																1011	2.7
FY 2000 Eqpt -- Kits					107	0.3														107	0.3
FY 2001 Eqpt -- Kits							495	1.3												495	1.3
FY 2002 Eqpt -- kits									495	1.4										495	1.4
FY 2003 Eqpt -- kits											495	1.4								495	1.4
FY 2004 Eqpt -- kits													495	1.4						495	1.4
FY 2005 Eqpt -- kits															495	1.4				495	1.4
TC Equip-Kits																	1552	4.7		1552	4.7
Total Installment	435	1.0	1011	2.7	107	0.3	495	1.3	495	1.4	495	1.4	495	1.4	495	1.4	1552	4.7		5580	15.6
Total Procurement Cost		20.5		2.7		0.3		1.3		1.4		4.1		5.2		5.3		13.2			54.0

**INDIVIDUAL MODIFICATION**

Date February 2000

**MODIFICATION TITLE:** Vehicle Intercommunications System (VIS) [MOD 3] 1-92-05-4412

**MODELS OF SYSTEMS AFFECTED:** M1 = 0 , IPM1 = 0 , M1A1 = 4337 , M1A2 = 181 TOTAL RQMT = 4518

**DESCRIPTION / JUSTIFICATION:**

The Vehicle Intercommunications System (VIS) is an intercom for inter-crew communications and a connection to a radio for tank to tank direct communications. VIS replaces the AN / VIC - 1 which is technologically obsolete, difficult to maintain and susceptible to electronic countermeasures. VIS is a state-of-the-art replacement which has none of these drawbacks. This is a Congressionally mandated program. All milestones are for USA CECOM, the "A" proponent for the VIS program. Current funding includes \$3.0M which Congress added to the President's Budget in FY 99 for validation of the "Wireless" VIS concept. Note that procurements exceed installations. Ten (10) kits were procured as spares and these will NOT be installed.

**DEVELOPMENT STATUS / MAJOR DEVELOPMENT MILESTONES:**

**PLANNED**

**ACCOMPLISHED**

Development Test & Eval.	-- - - - -	4Q92	2Q92
Initial Operational Test & Eval.	- - - - -	3Q94	3Q94
IPR Production Decision	-- - - - -	4Q94	4Q94

**Installation Schedule:**

Pr Yr	FY 1999				FY 2000				FY 2001				FY 2002				FY 2003			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
<b>Inputs</b>	3745	120	120	120	120	120	53													
<b>Outputs</b>	3405	120	120	120	83	168	168	168	166											

	FY 2004				FY 2005				FY 2006				FY 2007				To Complete	Totals		
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4				
<b>Inputs</b>																				4518
<b>Outputs</b>																				4518

**METHOD OF IMPLEMENTATION:** Depot/Contr. Teams ADMINISTRATIVE LEADTIME: 1 Months PRODUCTION LEADTIME: 4 Months  
**Contract Dates:** FY 1999 JUN 99 FY 2000 N/A FY 2001 N/A  
**Delivery Date:** FY 1999 OCT 99 FY 2000 N/A FY 2001 N/A

INDIVIDUAL MODIFICATION

Date

February 2000

MODIFICATION TITLE (Cont): Vehicle Intercommunications System (VIS) [MOD 3] 1-92-05-4412

FINANCIAL PLAN: (\$ in Millions)

	FY 1998 and Prior		FY 1999		FY 2000		FY 2001		FY 2002		FY 2003		FY 2004		FY 2005		TC		TOTAL		
	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	
RDT&E																					
PROCUREMENT																					
Kit Quantity	3745		773																	4518	
Installation Kits																					
Installation Kits, Nonrecurring																					
Equipment		35.9		7.7																	43.6
Equipment, Nonrecurring				3.0		2.0															5.0
Engineering Change Orders																					
Testing																					
Training Equipment																					
Support Equipment																					
Other																					
Interim Contractor Support																					
Installation of Hardware																					
FY 1998 & Prior Eqpt -- Kits	3405	4.5	443	0.6																3848	5.1
FY 1999 Eqpt -- Kits					670	1.0														670	1.0
FY 2000 Eqpt -- Kits																					
FY 2001 Eqpt -- Kits																					
FY 2002 Eqpt -- kits																					
FY 2003 Eqpt -- kits																					
FY 2004 Eqpt -- kits																					
FY 2005 Eqpt -- kits																					
TC Equip-Kits																					
Total Installment	3405	4.5	443	0.6	670	1.0														4518	6.1
Total Procurement Cost		40.4		11.3		3.0															54.7

**INDIVIDUAL MODIFICATION**

Date February 2000

**MODIFICATION TITLE:** Battlefield Combat I.D. System (BCIS) [MOD 4] 1-98-05-4543

**MODELS OF SYSTEMS AFFECTED:** M1 = 0 , IPM1 = 0 , M1A1 = 1535, M1A2 = 867 TOTAL RQMT = 2402

**DESCRIPTION / JUSTIFICATION:**

The Battlefield Combat Identification System (BCIS) is a millimeter wave Question and Answer system that will provide positive identification of friendly ground vehicles to minimize battlefield fratricide and enhance combat effectiveness. The BCIS is a designated Army Horizontal Technology Integration (HTI) Initiative. Note that the cost of installations is included in the hardware cost.

**DEVELOPMENT STATUS / MAJOR DEVELOPMENT MILESTONES:**

**PLANNED**

**ACCOMPLISHED**

Milestone II	3Q 93	3Q 93
Critical Design Review	2Q 94	2Q 94
PPQT / LUT	1Q 95	1Q 95
T. F. XXI Demo	3Q 97	3Q 97
NATO Demo	4Q 97	4Q 97
LRIP IPR	2Q 99	3Q 99

**Installation Schedule:**

Pr Yr	FY 1999				FY 2000				FY 2001				FY 2002				FY 2003			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
<b>Inputs</b>						10	10	10	10	10	10	10	10	10	10	10	10	10	10	10
<b>Outputs</b>										10	10	10	10	10	10	10	10	10	10	10

	FY 2004				FY 2005				FY 2006				FY 2007				To Complete	Totals
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4		
<b>Inputs</b>	10	10	10	10	10	8											2194	2402
<b>Outputs</b>	10	10	10	10	10	10	10	10									2212	2402

**METHOD OF IMPLEMENTATION:** Contractor Install ADMINISTRATIVE LEADTIME: 3 Months PRODUCTION LEADTIME: 7 Months

Contract Dates: FY 1999 N/A FY 2000 MAR 00 FY 2001 MAR 01

Delivery Date: FY 1999 N/A FY 2000 DEC 00 FY 2001 DEC 01

INDIVIDUAL MODIFICATION

Date

February 2000

MODIFICATION TITLE (Cont): Battlefield Combat I.D. System (BCIS) [MOD 4] 1-98-05-4543

FINANCIAL PLAN: (\$ in Millions)

	FY 1998 and Prior		FY 1999		FY 2000		FY 2001		FY 2002		FY 2003		FY 2004		FY 2005		TC		TOTAL		
	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	
RDT&E																					
PROCUREMENT																					
Kit Quantity					30		40		40		40		40		18		2194		2402		
Installation Kits																					
Installation Kits, Nonrecurring																					
Equipment					2.0		3.1		3.0		3.0		3.0		1.4		171.9		187.4		
Equipment, Nonrecurring																					
Engineering Change Orders																					
Data																					
Training Equipment																					
Support Equipment																					
Other																					
Interim Contractor Support																					
Installation of Hardware																					
FY 1998 & Prior Eqpt -- Kits																					
FY 1999 Eqpt -- Kits																					
FY 2000 Eqpt -- Kits							30													30	
FY 2001 Eqpt -- Kits									40											40	
FY 2002 Eqpt -- kits											40									40	
FY 2003 Eqpt -- kits												40								40	
FY 2004 Eqpt -- kits													40							40	
FY 2005 Eqpt -- kits														40						40	
TC Equip-Kits																	2212		2212		
Total Installment							30		40		40		40		40		2212		2402		
Total Procurement Cost					2.0		3.1		3.0		3.0		3.0		1.4		171.9		187.4		

**INDIVIDUAL MODIFICATION**

Date February 2000

**MODIFICATION TITLE:** Precision Lightweight GPS Receiver (PLGR) [MOD 5] 1-92-05-4417

**MODELS OF SYSTEMS AFFECTED:** M1 = 0, IPM1 = 0, M1A1 = 4327, M1A2 = 0 TOTAL RQMT = 4327

**DESCRIPTION / JUSTIFICATION:**

The Precision Lightweight GPS Receiver (PLGR) is a self-contained locator unit which can collect and process GPS satellite signals and derive Position (To within + or - 10 meters), Velocity and Time (PVT). The funding shown is for the PLGR Installation Kit only. PLGR units were procured and provided to PM Abrams by PM GPS.

**DEVELOPMENT STATUS / MAJOR DEVELOPMENT MILESTONES:**

**PLANNED**

**ACCOMPLISHED**

Preliminary Design Review	- - - - -	2Q91	2Q91
Critical Design Review	- - - - -	4Q91	4Q91
Contractor Test & Eval.	- - - - -	3Q93	4Q93
Development Test & Eval.	- - - - -	1Q94	3Q94
Initial Operational Test & Eval.	- - - - -	4Q94	1Q95
IPR Production Decision	- - - - -	4Q94	2Q95
TDP Available	- - - - -	2Q99	3Q99

**Installation Schedule:**

Pr Yr	FY 1999				FY 2000				FY 2001				FY 2002				FY 2003			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
<b>Inputs</b>	38			200	33	34	34	34	33	34	34	34	33	34	34	34	33	34	34	34
<b>Outputs</b>	38				50	50	50	50	33	34	34	34	33	34	34	34	33	34	34	34

	FY 2004				FY 2005				FY 2006				FY 2007				To Complete	Totals
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4		
<b>Inputs</b>	33	34	34	34	33	34	34	34									3279	4327
<b>Outputs</b>	33	34	34	34	33	34	34	34									3414	4327

**METHOD OF IMPLEMENTATION:** Contractor Team      **ADMINISTRATIVE LEADTIME:** 2 Months      **PRODUCTION LEADTIME:** 5 Months

**Contract Dates:** FY 1999 AUG 99      FY 2000 AUG 00      FY 2001 AUG 01

**Delivery Date:** FY 1999 JAN 00      FY 2000 JAN 01      FY 2001 JAN 02

INDIVIDUAL MODIFICATION

Date

February 2000

MODIFICATION TITLE (Cont): Precision Lightweight GPS Receiver (PLGR) [MOD 5] 1-92-05-4417

FINANCIAL PLAN: (\$ in Millions)

	FY 1998 and Prior		FY 1999		FY 2000		FY 2001		FY 2002		FY 2003		FY 2004		FY 2005		TC		TOTAL			
	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$		
RDT&E																						
PROCUREMENT																						
Kit Quantity	38		200		135		135		135		135		135		135		3279		4327			
Installation Kits																						
Installation Kits, Nonrecurring																						
Equipment		0.1		0.5		0.3		0.3		0.3		0.3		0.3		0.4		11.1		13.6		
Equipment, Nonrecurring																						
Engineering Change Orders		0.2																			0.2	
Data																						
Training Equipment																						
Support Equipment																						
Other [Benet Labs]		0.2																			0.2	
Interim Contractor Support																						
Installation of Hardware																						
FY 1998 & Prior Eqpt -- Kits	38	0.1																		38	0.1	
FY 1999 Eqpt -- Kits																					200	0.1
FY 2000 Eqpt -- Kits					200	0.1															135	0.1
FY 2001 Eqpt -- Kits							135	0.1													135	0.1
FY 2002 Eqpt -- kits									135	0.1											135	0.1
FY 2003 Eqpt -- kits											135	0.1									135	0.1
FY 2004 Eqpt -- kits													135	0.1							135	0.1
FY 2005 Eqpt -- kits															135	0.1					135	0.1
TC Equip-Kits																	3414	3.0			3414	3.0
Total Installment	38	0.1			200	0.1	135	0.1	135	0.1	135	0.1	135	0.1	135	0.1	3414	3.0			4327	3.7
Total Procurement Cost		0.6		0.5		0.4		0.4		0.4		0.4		0.4		0.5		14.1				17.7

**INDIVIDUAL MODIFICATION**

Date February 2000

**MODIFICATION TITLE:** Block G Mods [MOD 6] 1-99-05-4554

**MODELS OF SYSTEMS AFFECTED:** M1 = 0, IPM1 = 0, M1A1 = 4327, M1A2 = 81, TOTAL = 4408

**DESCRIPTION / JUSTIFICATION:**

Block G consists of the following M1A1/M1A2 Tank modifications: [1] Independent Manual Blaster, [2] Driver's/Loader's Hatch Ballistic Rims, [3] AFES Wiring Harness Ballistic Protection, [4] Driver's Hatch Latch, [5] Improved Gunner's Station, [6] Smoke Generator Fuel Line, [7] Ammunition Door Latch Mechanism, and [8] Battlefield Override. Each of these modifications corrects a deficiency found during Live-Fire Testing or during combat in Operation Desert Storm. These modifications were planned for concurrent procurement & installation. Quantities are shown as various because fielded tanks require varying numbers of the listed components due to production differences and because of unmatched kit deliveries from different small business vendors.

**DEVELOPMENT STATUS / MAJOR DEVELOPMENT MILESTONES:**

Various - Milestones differ for individual Modifications noted above.

**Installation Schedule:**

Pr Yr	FY 1999				FY 2000				FY 2001				FY 2002				FY 2003			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
<b>Totals</b>																				
<b>Inputs</b>																				
<b>Outputs</b>																				

  

	FY 2004				FY 2005				FY 2006				FY 2007				To Complete	Totals
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4		
<b>Inputs</b>																		
<b>Outputs</b>																		

**METHOD OF IMPLEMENTATION:** Contractor/Depot Teams      **ADMINISTRATIVE LEADTIME:** 2 Months      **PRODUCTION LEADTIME:** 6 Months

**Contract Dates:** FY 1999 FEB 99      FY 2000 FEB 00      FY 2001 FEB 01

**Delivery Date:** FY 1999 AUG 99      FY 2000 AUG 00      FY 2001 AUG 01

INDIVIDUAL MODIFICATION

Date February 2000

MODIFICATION TITLE (Cont): Block G Mods [MOD 6] 1-99-05-4554

FINANCIAL PLAN: (\$ in Millions)

	FY 1998 and Prior		FY 1999		FY 2000		FY 2001		FY 2002		FY 2003		FY 2004		FY 2005		TC		TOTAL		
	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	
RDT&E																					
PROCUREMENT																					
Kit Quantity	var.										var.		var.		var.		var.				
Installation Kits																					
Installation Kits, Nonrecurring																					
Equipment		15.7		0.5		0.3		0.5		0.7		0.8		0.7		0.7		2.8		22.7	
Equipment, Nonrecurring																					
Engineering Change Orders																					
Data																					
Training Equipment																					
Support Equipment																					
Other																					
Interim Contractor Support																					
Installation of Hardware																					
FY 1998 & Prior Eqpt -- Kits	var.	31.5																			31.5
FY 1999 Eqpt -- Kits			var.	1.5																	1.5
FY 2000 Eqpt -- Kits					var.	5.2															5.2
FY 2001 Eqpt -- Kits							var.	1.7													1.7
FY 2002 Eqpt -- kits									var.	1.8											1.8
FY 2003 Eqpt -- kits											var.	1.8									1.8
FY 2004 Eqpt -- kits													var.	1.8							1.8
FY 2005 Eqpt -- kits															var.	1.8					1.8
TC Equip-Kits																	var.	5.6			5.6
Total Installment		31.5		1.5		5.2		1.7		1.8		1.8		1.8		1.8		5.6		52.7	
Total Procurement Cost		47.2		2.0		5.5		2.2		2.5		2.6		2.5		2.5		8.4		75.4	

**INDIVIDUAL MODIFICATION**

Date February 2000

**MODIFICATION TITLE:** Pulse - Jet System (PJS) [MOD 7] 1-92-05-4475

**MODELS OF SYSTEMS AFFECTED:** M1 = 0 , IPM1 = 0 , M1A1 = 4327 , M1A2 = 228 TOTAL RQMT = 4555

**DESCRIPTION / JUSTIFICATION:**

The Pulse - Jet System (PJS) replaces a large portion of the current engine air filtration system. The purpose of PJS is to extend the time between required air path servicing in any severe dust environment. The current system requires frequent servicing in such an environment which can introduce dust into the clean air path as each servicing requires that the path is broken in order to complete the service. PJS greatly reduces the number of times the clean air path requires servicing. The result is improved combat performance and reduced O&S costs. PJS was identified as user priority number one by Abrams tank units involved in Operation Desert Storm (ODS). NOTE: 180ea additional PJS Kits were procured using FY97 DBOF OSCR (O & S Cost Rediction) funds. This procurement is NOT a part of the Abrams tank MOD Line procurements but the 180 are being installed using MOD Line \$\$\$, thus total procured will be 180 less than the total installed.

**DEVELOPMENT STATUS / MAJOR DEVELOPMENT MILESTONES:**

**PLANNED**

**ACCOMPLISHED**

Preliminary Design Review	- - - - -	2Q92	2Q92
Critical Design Review	- - - - -	3Q92	3Q92
Contractor Test & Eval.	- - - - -	3Q93	3Q93
Development Test & Eval.	- - - - -	3Q93	3Q93
Initial Operational Test & Eval.	- - - - -	4Q93	4Q93
IPR Production Decision	- - - - -	4Q93	4Q93
TDP Available	- - - - -	2Q96	2Q96

**Installation Schedule:**

Pr Yr	FY 1999				FY 2000				FY 2001				FY 2002				FY 2003				
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	
<b>Inputs</b>	514	60	60	60	60	60															
<b>Outputs</b>	425	77	76	76	76	48	48	48													

	FY 2004				FY 2005				FY 2006				FY 2007				To Complete	Totals			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4					
<b>Inputs</b>																				3681	4555
<b>Outputs</b>																				3681	4555

**METHOD OF IMPLEMENTATION:**

**ADMINISTRATIVE LEADTIME:** 24 Months

**PRODUCTION LEADTIME:** 24 Months

Contract Dates: FY 1999 Enter Date FY 2000 Enter Date FY 2001 Enter Date  
 Delivery Date: FY 1999 Enter Date FY 2000 Enter Date FY 2001 Enter Date

INDIVIDUAL MODIFICATION

Date

February 2000

MODIFICATION TITLE (Cont): Pulse - Jet System (PJS) [MOD 7] 1-92-05-4475

FINANCIAL PLAN: (\$ in Millions)

	FY 1998 and Prior		FY 1999		FY 2000		FY 2001		FY 2002		FY 2003		FY 2004		FY 2005		TC		TOTAL		
	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	
RDT&E																					
PROCUREMENT																					
Kit Quantity	694																3681	251.9	4375	251.9	
Installation Kits																					
Installation Kits, Nonrecurring																					
Equipment		32.6																			32.6
Equipment, Nonrecurring		0.6																			0.6
Engineering Change Orders		1.0																			1.0
Testing		0.9																			0.9
Training Equipment																					
Support Equipment																					
Other																					
Interim Contractor Support																					
Installation of Hardware																					
FY 1998 & Prior Eqpt -- Kits	425	3.6																		425	3.6
FY 1999 Eqpt -- Kits			305	2.4																305	2.4
FY 2000 Eqpt -- Kits					144	1.2														144	1.2
FY 2001 Eqpt -- Kits																					
FY 2002 Eqpt -- kits																					
FY 2003 Eqpt -- kits																					
FY 2004 Eqpt -- kits																					
FY 2005 Eqpt -- kits																					
TC Equip-Kits																	3681	43.2	3681	43.2	
Total Installment	425	3.6	305	2.4	144	1.2											3681	43.2	4555	50.4	
Total Procurement Cost		38.7		2.4		1.2												295.1			337.4

**INDIVIDUAL MODIFICATION**

Date February 2000

**MODIFICATION TITLE:** FBCB2 Upgrade [MOD 8] 1-96-05-4516

**MODELS OF SYSTEMS AFFECTED:** M1A1-D & M1A2-SEP

**DESCRIPTION / JUSTIFICATION:**  
 FBCB2 Upgrade refers to the Command and Control software required for digital communications between the Abrams tanks and the other members of the combined arms team. The Force XXI Battle Command Brigade and Below [FBCB2] Initial Operational Test & Evaluation as noted in the milestones below, will be the first formal user test of this software. This budget line provides the means for updating microprocessors and software in order to keep abreast of advances in digital computing and wireless networking technologies. All costs including installation are included in the hardware / contract costs shown on the following page.

DEVELOPMENT STATUS / MAJOR DEVELOPMENT MILESTONES:		PLANNED	ACCOMPLISHED
Preliminary Design Review	- - - - -	2Q97	3Q97
Critical Design Review	- - - - -	3Q97	4Q97
Contractor Test & Eval.	- - - - -	1Q98	1Q98
Development Test & Eval.	- - - - -	3Q98	3Q98
Performance Spec. Complete	- - - - -	4Q99	4Q99
IOT&E [Now FBCB2]	- - - - -	2Q02	
IPR Production Decision	- - - - -	3Q02	

**Installation Schedule:**

Pr Yr	FY 1999				FY 2000				FY 2001				FY 2002				FY 2003			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
<b>Totals</b>																				
<b>Inputs</b>																				
<b>Outputs</b>																				

  

	FY 2004				FY 2005				FY 2006				FY 2007				To Complete	Totals
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4		
<b>Inputs</b>																		
<b>Outputs</b>																		

**METHOD OF IMPLEMENTATION:** Field Svc. Rep. ADMINISTRATIVE LEADTIME: 2 Months PRODUCTION LEADTIME: 8 Months  
 Contract Dates: FY 1999 N/A FY 2000 N/A FY 2001 NOV 00  
 Delivery Date: FY 1999 N/A FY 2000 N/A FY 2001 JUL 01

INDIVIDUAL MODIFICATION

Date February 2000

MODIFICATION TITLE (Cont): FBCB2 Upgrades [MOD 8] 1-96-05-4516

FINANCIAL PLAN: (\$ in Millions)

	FY 1998 and Prior		FY 1999		FY 2000		FY 2001		FY 2002		FY 2003		FY 2004		FY 2005		TC		TOTAL		
	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	
RDT&E																					
PROCUREMENT																					
Kit Quantity																					
Installation Kits																					
Installation Kits, Nonrecurring																					
Equipment																					
Equipment, Nonrecurring																					
Engineering Change Orders																					
Data																					
Training Equipment																					
Support Equipment																					
Other																					
Interim Contractor Support																					
Installation of Hardware																					
FY 1998 & Prior Eqpt -- Kits																					
FY 1999 Eqpt -- Kits																					
FY 2000 Eqpt -- Kits																					
FY 2001 Eqpt -- Kits																					
FY 2002 Eqpt -- kits																					
FY 2003 Eqpt -- kits																					
FY 2004 Eqpt -- kits																					
FY 2005 Eqpt -- kits																					
TC Equip-Kits																					
Total Installment																					
Total Procurement Cost								7.7	4.2	2.8	1.1	5.0	56.2	77.0							

**INDIVIDUAL MODIFICATION**

Date February 2000

**MODIFICATION TITLE:** External Auxiliary Power Unit (EAPU) [MOD 9] 1-85-05-4057

**MODELS OF SYSTEMS AFFECTED:** M1 = 0 , IPM1 = 0 , M1A1 = 1826 , M1A2 = 1174 TOTAL RQMT = 3000

**DESCRIPTION / JUSTIFICATION:**

The current use of the Abrams Tank in stationary night defensive position, known as Silent Watch Mode, requires long duration idling of the AGT - 1500 vehicle main engine in order to generate the required electricity. The External Auxiliary Power Unit (EAPU) will provide power for this type of requirement at greatly reduced fuel usage and without main engine wear. The EAPU continuously delivers 2.2 KW of power at 28 Volts DC. The EAPU will be mounted in the left side of the turret bustle rack and will be fully integrated with the tank electrical systems. The EAPU has its own fuel supply and can provide power for 10 to 12 hours on one tank - full of diesel fuel.

**DEVELOPMENT STATUS / MAJOR DEVELOPMENT MILESTONES:**

**PLANNED**

**ACCOMPLISHED**

Preliminary Design Review	- - - - -	N / A	**	** This is a re-buy of an item last procured in FY 91/92
Critical Design Review	- - - - -	N / A	**	
Contractor Test & Eval.	- - - - -	N / A	**	
Development Test & Eval.	- - - - -	N / A	**	
Initial Operational Test & Eval.	- - - - -	N / A	**	
IPR Production Decision	- - - - -	N / A	**	
T D P Available	- - - - -	N / A	**	

**Installation Schedule:**

Pr Yr	FY 1999				FY 2000				FY 2001				FY 2002				FY 2003			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
<b>Inputs</b>	1838																			
<b>Outputs</b>	1666	43	43	43	43															

	FY 2004				FY 2005				FY 2006				FY 2007				To Complete	Totals	
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4			
<b>Inputs</b>																		1162	3000
<b>Outputs</b>																		1162	3000

**METHOD OF IMPLEMENTATION:** Cntrtr./Depot Teams      **ADMINISTRATIVE LEADTIME:** 4 Months      **PRODUCTION LEADTIME:** 6 Months

**Contract Dates:** FY 1999 N/A      FY 2000 N/A      FY 2001 N/A

**Delivery Date:** FY 1999 N/A      FY 2000 N/A      FY 2001 N/A

INDIVIDUAL MODIFICATION

Date

February 2000

MODIFICATION TITLE (Cont): External Auxiliary Pwr Unit (EAPU) [MOD 9] 1-85-05-4057

FINANCIAL PLAN: (\$ in Millions)

	FY 1998 and Prior		FY 1999		FY 2000		FY 2001		FY 2002		FY 2003		FY 2004		FY 2005		TC		TOTAL		
	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	
RDT&E																					
PROCUREMENT																					
Kit Quantity	1838																1162		3000		
Installation Kits																					
Installation Kits, Nonrecurring																					
Equipment		49.9																32.0		81.9	
Equipment, Nonrecurring																					
Engineering Change Orders																					
Data																					
Training Equipment																					
Support Equipment																					
Other																					
Interim Contractor Support																					
Installation of Hardware																					
FY 1998 & Prior Eqpt -- Kits	1666	8.4																		1666	8.4
FY 1999 Eqpt -- Kits			172	1.4																172	1.4
FY 2000 Eqpt -- Kits																					
FY 2001 Eqpt -- Kits																					
FY 2002 Eqpt -- kits																					
FY 2003 Eqpt -- kits																					
FY 2004 Eqpt -- kits																					
FY 2005 Eqpt -- kits																					
TC Equip-Kits																	1162	7.9	1162	7.9	
Total Installment	1666	8.4	172	1.4													1162	7.9	3000	17.7	
Total Procurement Cost		58.3		1.4														39.9			99.6

**INDIVIDUAL MODIFICATION**

Date February 2000

**MODIFICATION TITLE:** NBC Fire Warning (NBCFW) [MOD 10] 1-97-05-4524

**MODELS OF SYSTEMS AFFECTED:** M1 = 0 , IPM1 = 0 , M1A1 = 4327 , M1A2 = 0 TOTAL RQMT = 4327

**DESCRIPTION / JUSTIFICATION:**  
 The NBC Fire Warning (NBCFW) modification is an NBC (Nuclear, Chemical & Biological) system safety fix. It addresses the problem of NBC system fires caused by overheating. The NBCFW will provide for an audible warning alarm in the crew CVC helmet that sounds when the NBC sponson over - temperature light illuminates. This audible warning will allow tank crews to take the early action necessary to properly deal with an NBC filter fire. Only the M1A1 requires this modification. Earlier models do not have the NBC system on - board and M1A2's are being modified through a software change.

DEVELOPMENT STATUS / MAJOR DEVELOPMENT MILESTONES:		PLANNED	ACCOMPLISHED
Preliminary Design Review	- - - - -	2Q96	3Q96
Critical Design Review	- - - - -	3Q97	3Q97
Initial Operational Test & Eval.	- - - - -	1Q98	1Q98
IPR Production Decision	- - - - -	2Q98	2Q98
T D P Available	- - - - -	1Q99	1Q99

**Installation Schedule:**

Pr Yr	FY 1999				FY 2000				FY 2001				FY 2002				FY 2003			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
<b>Inputs</b>				200	123	123	124	125	123	123	124	125	123	123	124	125	123	123	124	125
<b>Outputs</b>					50	50	50	50	123	123	124	125	123	123	124	125	123	123	124	125

  

	FY 2004				FY 2005				FY 2006				FY 2007				To Complete	Totals
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4		
<b>Inputs</b>	123	123	124	125	123	123	124	125									1157	4327
<b>Outputs</b>	123	123	124	125	123	123	124	125									1652	4327

**METHOD OF IMPLEMENTATION:** Contractor Team      **ADMINISTRATIVE LEADTIME:** 2 Months      **PRODUCTION LEADTIME:** 5 Months  
**Contract Dates:** FY 1999 AUG 99      FY 2000 JAN 00      FY 2001 JAN 01  
**Delivery Date:** FY 1999 DEC 99      FY 2000 JUN 00      FY 2001 JUN 01

INDIVIDUAL MODIFICATION

Date

February 2000

MODIFICATION TITLE (Cont): NBC Fire Warning (NBCFW) [MOD 10] 1-97-05-4524

FINANCIAL PLAN: (\$ in Millions)

	FY 1998 and Prior		FY 1999		FY 2000		FY 2001		FY 2002		FY 2003		FY 2004		FY 2005		TC		TOTAL		
	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	
RDT&E																					
PROCUREMENT																					
Kit Quantity			200		495		495		495		495		495		495		1157		4327		
Installation Kits																					
Installation Kits, Nonrecurring																					
Equipment				0.5		1.2		1.3		1.3		1.3		1.3		1.4		3.3		11.6	
Equipment, Nonrecurring																					
Engineering Change Orders																					
Data																					
Training Equipment																					
Support Equipment																					
Other																					
Interim Contractor Support																					
Installation of Hardware																					
FY 1998 & Prior Eqpt -- Kits																					
FY 1999 Eqpt -- Kits																					
FY 2000 Eqpt -- Kits					200	0.1													200	0.1	
FY 2001 Eqpt -- Kits							495	0.2											495	0.2	
FY 2002 Eqpt -- kits									495	0.2									495	0.2	
FY 2003 Eqpt -- kits											495	0.2							495	0.2	
FY 2004 Eqpt -- kits													495	0.2					495	0.2	
FY 2005 Eqpt -- kits															495	0.2			495	0.2	
TC Equip-Kits																	1652	0.7	1652	0.7	
Total Installment					200	0.1	495	0.2	495	0.2	495	0.2	495	0.2	495	0.2	1652	0.7	4327	1.8	
Total Procurement Cost				0.5		1.3		1.5		1.5		1.5		1.5		1.6		4.0		13.4	

**INDIVIDUAL MODIFICATION**

Date February 2000

**MODIFICATION TITLE:** Hand - Held Fire Extinguisher (HHFE) [MOD 11] 1-97-05-4525

**MODELS OF SYSTEMS AFFECTED:** M1 = 0, IPM1 = 0, M1A1 = 3750, M1A2 = 0 TOT RQMT = 3750

**DESCRIPTION / JUSTIFICATION:**  
 Under the terms of the 1988 Montreal Protocol in which 93 countries including the U.S.A. agreed to phase out Ozone Depleting Chemicals (ODC's), HALON 1301 used in the Abrams Tank for fire suppression must be eliminated. One current program does this in the engine compartment. This additional program will replace HALON Hand - Held Fire Extinguishers in the Abrams turret with new Non - HALON extinguishers. The funding identified here - in will support the initial buy of Abrams Hand - Held Fire Extinguishers. Note that installation funding is NOT identified. This program is expected to result in a one - for - one replacement in each Abrams tank which can easily be accomplished by tank crews so deliveries will be directly to tank units and no formal installation program is required nor is one shown below. Also note that four (4) extinguishers are required per tank so that 15000 will equip the 3750 tanks noted above while Reserve and N.G. tank requirements will be funded within their

DEVELOPMENT STATUS / MAJOR DEVELOPMENT MILESTONES:		PLANNED	ACCOMPLISHED
Preliminary Design Review	- - - - -	2Q97	2Q97
Critical Design Review	- - - - -	2Q98	2Q98
Initial Operational Test & Eval.	- - - - -	4Q98	4Q98
IPR Production Decision	- - - - -	2Q99	2Q99
T D P Available	- - - - -	3Q00	

**Installation Schedule:**

Pr Yr	FY 1999				FY 2000				FY 2001				FY 2002				FY 2003			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
<b>Totals</b>																				
<b>Inputs</b>																				
<b>Outputs</b>																				

  

	FY 2004				FY 2005				FY 2006				FY 2007				To Complete	Totals
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4		
<b>Inputs</b>																		
<b>Outputs</b>																		

**METHOD OF IMPLEMENTATION:** By Units ADMINISTRATIVE LEADTIME: 2 Months PRODUCTION LEADTIME: 4 Months  
 Contract Dates: FY 1999 N/A FY 2000 JAN 00 FY 2001 JAN 01  
 Delivery Date: FY 1999 N/A FY 2000 MAY 00 FY 2001 MAY 01

INDIVIDUAL MODIFICATION

Date

February 2000

MODIFICATION TITLE (Cont): Hand - Held Fire Extinguisher (HHFE) [MOD 11] 1-97-05-4525

FINANCIAL PLAN: (\$ in Millions)

	FY 1998 and Prior		FY 1999		FY 2000		FY 2001		FY 2002		FY 2003		FY 2004		FY 2005		TC		TOTAL		
	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	
RDT&E																					
PROCUREMENT																					
Kit Quantity							15000													15000	
Installation Kits																					
Installation Kits, Nonrecurring																					
Equipment								2.0													2.0
Equipment, Nonrecurring																					
Engineering Change Orders																					
Data																					
Training Equipment																					
Support Equipment																					
Other																					
Interim Contractor Support																					
Installation of Hardware																					
FY 1998 & Prior Eqpt -- Kits																					
FY 1999 Eqpt -- Kits																					
FY 2000 Eqpt -- Kits																					
FY 2001 Eqpt -- Kits																					
FY 2002 Eqpt -- kits																					
FY 2003 Eqpt -- kits																					
FY 2004 Eqpt -- kits																					
FY 2005 Eqpt -- kits																					
TC Equip-Kits																					
Total Installment																					
Total Procurement Cost								2.0													2.0

**INDIVIDUAL MODIFICATION**

Date February 2000

**MODIFICATION TITLE:** M1A2 Field Mods (A2FM) [MOD 12] 1-97-05-4534

**MODELS OF SYSTEMS AFFECTED:**  
M1A2 Only

**DESCRIPTION / JUSTIFICATION:**  
M1A2 Field Modifications (A2FM) represents funding for a continuing series of upgrades for M1A2 unique LRU's (Line Replaceable Unit's) and / or SRU's (Shop Replaceable Unit's) . Examples of these include the Fire - Control Electronics Unit (FCEU), Commander's Integrated Display (CID) and various electronic "cards" (A6 , A9 , A10 , A12 & A13 for example) for which modification rather than replacement is both feasible and cost effective. There is no set quantity for this modification and, therefore no installation schedule in the normal sense of the term. These upgrades will be applied to every fielded M1A2 tank as each is proven and approved and the number of fielded M1A2's will continue to increase. This program is expected to "run" as long as M1A2 production and fielding continues.

**DEVELOPMENT STATUS / MAJOR DEVELOPMENT MILESTONES:**

N / A

**Installation Schedule:**

Pr Yr	FY 1999				FY 2000				FY 2001				FY 2002				FY 2003			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
<b>Totals</b>																				
<b>Inputs</b>																				
<b>Outputs</b>																				

  

	FY 2004				FY 2005				FY 2006				FY 2007				To Complete	Totals
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4		
<b>Inputs</b>																		
<b>Outputs</b>																		

**METHOD OF IMPLEMENTATION:** Depot Team      **ADMINISTRATIVE LEADTIME:** Months      **PRODUCTION LEADTIME:** Months  
 Contract Dates:                      FY 1999                                      FY 2000                                      FY 2001  
 Delivery Date:                          FY 1999                                      FY 2000                                      FY 2001

INDIVIDUAL MODIFICATION

Date February 2000

MODIFICATION TITLE (Cont): M1A2 Field Mods (A2FM) [MOD 12] 1-97-05-4534

FINANCIAL PLAN: (\$ in Millions)

	FY 1998 and Prior		FY 1999		FY 2000		FY 2001		FY 2002		FY 2003		FY 2004		FY 2005		TC		TOTAL		
	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	
RDT&E																					
PROCUREMENT																					
Kit Quantity																					
Installation Kits																					
Installation Kits, Nonrecurring																					
Equipment																					
Equipment, Nonrecurring																					
Engineering Change Orders																					
Data																					
Training Equipment																					
Support Equipment																					
Other																					
Interim Contractor Support																					
Installation of Hardware																					
FY 1998 & Prior Eqpt -- Kits	2.1																				2.1
FY 1999 Eqpt -- Kits			0.8																		0.8
FY 2000 Eqpt -- Kits					0.9																0.9
FY 2001 Eqpt -- Kits							1.0														1.0
FY 2002 Eqpt -- kits									0.9												0.9
FY 2003 Eqpt -- kits											1.0										1.0
FY 2004 Eqpt -- kits												1.4									1.4
FY 2005 Eqpt -- kits															1.2						1.2
TC Equip-Kits																			3.3		3.3
Total Installment	2.1		0.8		0.9		1.0		0.9		1.0		1.4		1.2				3.3		12.6
Total Procurement Cost	2.1		0.8		0.9		1.0		0.9		1.0		1.4		1.2				3.3		12.6

**INDIVIDUAL MODIFICATION**

Date February 2000

**MODIFICATION TITLE:** Matrix Support (MXSP) [MOD 13] OSIP NO 14

**MODELS OF SYSTEMS AFFECTED:** WHOLE FLEET

**DESCRIPTION / JUSTIFICATION:**  
 Matrix Support funds Government salaries for Engineering, Quality Assurance, Procurement and Logistics support of the entire Abrams Tank Modification program.

**DEVELOPMENT STATUS / MAJOR DEVELOPMENT MILESTONES:**  
 N / A

**Installation Schedule:**

Pr Yr	FY 1999				FY 2000				FY 2001				FY 2002				FY 2003			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
<b>Totals</b>																				
<b>Inputs</b>																				
<b>Outputs</b>																				

  

	FY 2004				FY 2005				FY 2006				FY 2007				To Complete	Totals
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4		
<b>Inputs</b>																		
<b>Outputs</b>																		

**METHOD OF IMPLEMENTATION:** PM/PEO Initiative      **ADMINISTRATIVE LEADTIME:** 0 Months      **PRODUCTION LEADTIME:** 0 Months  
**Contract Dates:** FY 1999 N/A      FY 2000 N/A      FY 2001 N/A  
**Delivery Date:** FY 1999 N/A      FY 2000 N/A      FY 2001 N/A

INDIVIDUAL MODIFICATION

Date February 2000

MODIFICATION TITLE (Cont): Matrix Support (MXSP) [MOD 13] OSIP NO 14

FINANCIAL PLAN: (\$ in Millions)

	FY 1998 and Prior		FY 1999		FY 2000		FY 2001		FY 2002		FY 2003		FY 2004		FY 2005		TC		TOTAL		
	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	
RDT&E																					
PROCUREMENT																					
Kit Quantity																					
Installation Kits																					
Installation Kits, Nonrecurring																					
Equipment																					
Equipment, Nonrecurring																					
Engineering Change Orders																					
Data																					
Training Equipment																					
Support	1.4		0.6		0.6		0.6		0.6		0.6		0.6		0.6		0.6		116.8		122.4
Other																					
Interim Contractor Support																					
Installation of Hardware																					
FY 1998 & Prior Eqpt -- Kits																					
FY 1999 Eqpt -- Kits																					
FY 2000 Eqpt -- Kits																					
FY 2001 Eqpt -- Kits																					
FY 2002 Eqpt -- kits																					
FY 2003 Eqpt -- kits																					
FY 2004 Eqpt -- kits																					
FY 2005 Eqpt -- kits																					
TC Equip-Kits																					
Total Installment																					
Total Procurement Cost	1.4		0.6		0.6		0.6		0.6		0.6		0.6		0.6		0.6		116.8		122.4

**INDIVIDUAL MODIFICATION**

Date February 2000

**MODIFICATION TITLE:** DU Armor [MOD 14] 1-98-05-4545

**MODELS OF SYSTEMS AFFECTED:** M1 = 0, IPM1 = 0, M1A1 = 1463, M1A2 = 0 TOTAL = 1463

**DESCRIPTION / JUSTIFICATION:**

Depleted Uranium [DU] Armor Package is a Classified Program.

**DEVELOPMENT STATUS / MAJOR DEVELOPMENT MILESTONES:**

N / A (This is a continuation of the M1A2 Armor Program) 72 armor sets procured with M1A2 upgrade (SSN: GAO 750) funds will be installed with FY2004 funds.

**Installation Schedule:**

Pr Yr	FY 1999				FY 2000				FY 2001				FY 2002				FY 2003			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
<b>Totals</b>																				
<b>Inputs</b>																				
<b>Outputs</b>																				

  

	FY 2004				FY 2005				FY 2006				FY 2007				To Complete	Totals
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4		
<b>Inputs</b>	72	72	72	72	72												1103	1463
<b>Outputs</b>		12	30	30	30	30	30										1343	1535

**METHOD OF IMPLEMENTATION:** Contractor ADMINISTRATIVE LEADTIME: 6 Months PRODUCTION LEADTIME: 13 Months  
 Contract Dates: FY 1999 N/A FY 2000 N/A FY 2001 N/A  
 Delivery Date: FY 1999 N/A FY 2000 N/A FY 2001 N/A

INDIVIDUAL MODIFICATION

Date February 2000

MODIFICATION TITLE (Cont): DU Armor [MOD 14] 1-98-05-4545

FINANCIAL PLAN: (\$ in Millions)

	FY 1998 and Prior		FY 1999		FY 2000		FY 2001		FY 2002		FY 2003		FY 2004		FY 2005		TC		TOTAL		
	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	
RDT&E																					
PROCUREMENT																					
Kit Quantity													240		120		1103				1463
Installation Kits																					
Installation Kits, Nonrecurring																					
Equipment													91.7		56.5		581.0				729.2
Equipment, Nonrecurring																					
Engineering Change Orders																					
Data																					
Training Equipment																					
Support Equipment																					
Other																					
Interim Contractor Support																					
Installation of Hardware																					
FY 1998 & Prior Eqpt -- Kits																					
FY 1999 Eqpt -- Kits																					
FY 2000 Eqpt -- Kits																					
FY 2001 Eqpt -- Kits																					
FY 2002 Eqpt -- kits																					
FY 2003 Eqpt -- kits																					
FY 2004 Eqpt -- kits												72	3.6							72	3.6
FY 2005 Eqpt -- kits														120	6.1					120	6.1
TC Equip-Kits																	1343	78.0			1343 78.0
Total Installment													72	3.6	120	6.1	1343	78.0			1535 87.7
Total Procurement Cost													95.3		62.6		659.0				816.9

**INDIVIDUAL MODIFICATION**

Date February 2000

**MODIFICATION TITLE:** Improved Turret Side Armor [MOD 15] 1-99-05-4555

**MODELS OF SYSTEMS AFFECTED:** M1A1 = 100 and M1A2 = 767 - TOTAL = 867

**DESCRIPTION / JUSTIFICATION:**

Improved Turret Side Armor is a completely passive special armor designed to improve RPG (Rocket Propelled Grenade) protection by 250% on the turret sides of the crew compartment. The new design will completely replace the current turret side armor and significantly enhance tank / crew operational capabilities and survivability.

**DEVELOPMENT STATUS / MAJOR DEVELOPMENT MILESTONES:**

**PLANNED**

**ACCOMPLISHED**

Preliminary Design Review	- - - - -	4Q98	4Q98
Contractor Test & Eval.	- - - - -	2Q99	2Q99
Critical Design Review	- - - - -	4Q99	4Q99
IPR Production Decision	- - - - -	4Q00	
Tech. Data Package Available	- - - - -	1Q01	

**Installation Schedule:**

Pr Yr	FY 1999				FY 2000				FY 2001				FY 2002				FY 2003				
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	
<b>Totals</b>													16	5	5	5	5	7	7	8	8
<b>Inputs</b>														4	4	4	4	5	5	5	5
<b>Outputs</b>																					

  

	FY 2004				FY 2005				FY 2006				FY 2007				To Complete	Totals
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4		
<b>Inputs</b>	7	7	7	8	7	7	7	6									745	867
<b>Outputs</b>	7	7	8	8	7	7	7	8									772	867

**METHOD OF IMPLEMENTATION:** Contractor Team      **ADMINISTRATIVE LEADTIME:** 6 Months      **PRODUCTION LEADTIME:** 13 Months  
**Contract Dates:** FY 1999 N/A      FY 2000 N/A      FY 2001 DEC 00  
**Delivery Date:** FY 1999 N/A      FY 2000 N/A      FY 2001 JAN 02

INDIVIDUAL MODIFICATION

Date February 2000

MODIFICATION TITLE (Cont): Improved Turret Side Armor [MOD 15] 1-99-05-4555

FINANCIAL PLAN: (\$ in Millions)

	FY 1998 and Prior		FY 1999		FY 2000		FY 2001		FY 2002		FY 2003		FY 2004		FY 2005		TC		TOTAL		
	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	
RDT&E																					
PROCUREMENT																					
Kit Quantity							16		20		30		29		27		745		867		
Installation Kits																					
Installation Kits, Nonrecurring																					
Equipment							1.7		2.1		3.3		3.2		3.0		90.0		103.3		
Equipment, Nonrecurring																					
Engineering Change Orders																					
Data																					
Training Equipment																					
Support Equipment																					
Other																					
Interim Contractor Support																					
Installation of Hardware																					
FY 1998 & Prior Eqpt -- Kits																					
FY 1999 Eqpt -- Kits																					
FY 2000 Eqpt -- Kits																					
FY 2001 Eqpt -- Kits																					
FY 2002 Eqpt -- kits								16	0.9										16	0.9	
FY 2003 Eqpt -- kits										20	1.1								20	1.1	
FY 2004 Eqpt -- kits												30	1.7						30	1.7	
FY 2005 Eqpt -- kits														29	1.6				29	1.6	
TC Equip-Kits																	772	47.5	772	47.5	
Total Installment									16	0.9	20	1.1	30	1.7	29	1.6	772	47.5	867	52.8	
Total Procurement Cost							1.7		3.0		4.4		4.9		4.6		137.5		156.1		

**INDIVIDUAL MODIFICATION**

Date February 2000

**MODIFICATION TITLE:** Eyesafe Laser Rangefinder (ESLRF) [MOD 16] 1-99-05-4563

**MODELS OF SYSTEMS AFFECTED:** M1 = 0, IPM1 = 0, M1A1 = 4192, M1A2 = 0 TOTAL =4192

**DESCRIPTION / JUSTIFICATION:**

The Eyesafe Laser Rangefinder (ESLRF) is an improved laser rangefinder which is compatible with existing M1A1 tank sights (can range through obscurants to any target visible in day or night sights) and is eyesafe at any range. This enhancement allows for unit training / warfighting without the need for stringent safety precautions as had been required when employing the Nd:YAG LRF (Neodidium: Ytrium Aluminum Garnet Laser Range Finder) which can permanently damage unprotected eyes. The ESLRF is an integral part of a Force Modernization program that will ensure that the highest priority Force Package I M1A1 Units are equipped with the best A1 possible. The ESLRF represents a significant modification to the A1 fleet which will result in improved tank fightability and survivability.

**DEVELOPMENT STATUS / MAJOR DEVELOPMENT MILESTONES:**

N/A - The M1A1 ESLRF program is a continuation of the M1A2 Upgrade ESLRF program. All development, testing and decision milestones are complete.

**Installation Schedule:**

Pr Yr	FY 1999				FY 2000				FY 2001				FY 2002				FY 2003			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
<b>Inputs</b>											46	46	46	47	33	34	34	34	33	34
<b>Outputs</b>													46	46	46	47	33	34	34	34

  

	FY 2004				FY 2005				FY 2006				FY 2007				To Complete	Totals
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4		
<b>Inputs</b>	34	34	33	34	52	53	53	53									3459	4192
<b>Outputs</b>	33	34	34	34	33	34	34	34									3602	4192

**METHOD OF IMPLEMENTATION:** Contractor Team      **ADMINISTRATIVE LEADTIME:** 3 Months      **PRODUCTION LEADTIME:** 9 Months

**Contract Dates:** FY 1999 N/A      FY 2000 N/A      FY 2001 DEC 00

**Delivery Date:** FY 1999 N/A      FY 2000 N/A      FY 2001 SEP 01

INDIVIDUAL MODIFICATION

Date February 2000

MODIFICATION TITLE (Cont): Eyesafe Laser Rangefinder (ESLRF) [MOD 16] 1-99-05-4563

FINANCIAL PLAN: (\$ in Millions)

	FY 1998 and Prior		FY 1999		FY 2000		FY 2001		FY 2002		FY 2003		FY 2004		FY 2005		TC		TOTAL		
	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	
RDT&E																					
PROCUREMENT																					
Kit Quantity							185		135		135		135		143			3459		4192	
Installation Kits																					
Installation Kits, Nonrecurring																					
Equipment								5.1	4.0		4.0		4.1		4.3			92.1		113.6	
Equipment, Nonrecurring																					
Engineering Change Orders																					
Data																					
Training Equipment																					
Support Equipment																					
Other																					
Interim Contractor Support																					
Installation of Hardware																					
FY 1998 & Prior Eqpt -- Kits																					
FY 1999 Eqpt -- Kits																					
FY 2000 Eqpt -- Kits																					
FY 2001 Eqpt -- Kits																					
FY 2002 Eqpt -- kits									185	1.0										185	1.0
FY 2003 Eqpt -- kits											135	0.7								135	0.7
FY 2004 Eqpt -- kits													135	0.7						135	0.7
FY 2005 Eqpt -- kits															135	0.8				135	0.8
TC Equip-Kits																		3602	23.8	3602	23.8
Total Installment									185	1.0	135	0.7	135	0.7	135	0.8		3602	23.8	4192	27.0
Total Procurement Cost								5.1	5.0		4.7		4.8		5.1			115.9		140.6	

**INDIVIDUAL MODIFICATION**

Date February 2000

**MODIFICATION TITLE:** M1A1-D {Digitized} [MOD 17] 1-98-05-4542

**MODELS OF SYSTEMS AFFECTED:** M1 = 0, IPM1 = 0, M1A1 = 98, M1A2 = 0 TOTAL = 98

**DESCRIPTION / JUSTIFICATION:**

The Abrams M1A1-D is an M1A1 Abrams Main Battle Tank that has been equipped with a digital applique command and control package. The A-Kit consists of an Upgraded Tank Commander's Panel (UTCP) and associated peripheral hardware. The B-Kit is the Applique Computer display and keyboard. The C-Kit provides a far target capability by integrating a North Finding Module (NFM) and a Digital Interface Unit (DIU) to process raw tank data and format messages for transmittal to the Applique computer. Some of the tanks slated for this improvement also have to be modified to accept the Enhanced Position Locating and Reporting System, Commonly referred to as the EPLRS radio.

This digitization modification will enable the M1A1 to exchange digital command and control data in the Army's Common Operating Environment format used the the more advance M1A2 SEP tanks and other members of the combined arms team. It is a key component of

**DEVELOPMENT STATUS / MAJOR DEVELOPMENT MILESTONES:**

**PLANNED**

**ACCOMPLISHED**

Preliminary Design Revie	- - - - -	2Q98	2Q98
Critical Design Review	- - - - -	3Q98	3Q98
Initial Operational Test & Eval.	- - - - -	4Q98	4Q98
IPR Production Decision	- - - - -	3Q99	4Q99
E C P Available	- - - - -	3Q00	
T D P Available	- - - - -	3Q00	

**Installation Schedule:**

Pr Yr	FY 1999				FY 2000				FY 2001				FY 2002				FY 2003			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
<b>Totals</b>						30	34	34	34											
<b>Inputs</b>																				
<b>Outputs</b>																				

  

	FY 2004				FY 2005				FY 2006				FY 2007				To Complete	Totals
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4		
<b>Inputs</b>																		98
<b>Outputs</b>																		98

**METHOD OF IMPLEMENTATION:** Contractor Team ADMINISTRATIVE LEADTIME: 3 Months PRODUCTION LEADTIME: 8 Months  
 Contract Dates: FY 1999 SEP 99 FY 2000 DEC 00 FY 2001 AUG 01  
 Delivery Date: FY 1999 JUL 00 FY 2000 JUN 01 FY 2001 JUN 02

INDIVIDUAL MODIFICATION

Date

February 2000

MODIFICATION TITLE (Cont): M1A1-D {Digitized} [MOD 17] 1-98-05-4542

FINANCIAL PLAN: (\$ in Millions)

	FY 1998 and Prior		FY 1999		FY 2000		FY 2001		FY 2002		FY 2003		FY 2004		FY 2005		TC		TOTAL		
	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	
RDT&E																					
PROCUREMENT																					
Kit Quantity	var		var		var																98
Installation Kits																					
Installation Kits, Nonrecurring																					
Equipment		4.8		3.5		16.4															24.7
Equipment, Nonrecurring																					
Engineering Change Orders																					
Initial Spares																					
Training Equipment																					
Support Equipment																					
Other																					
Interim Contractor Support																					
Gov't Support & Testing																					
Installation of Hardware																					
FY 1998 & Prior Eqpt -- Kits																					
FY 1999 Eqpt -- Kits																					
FY 2000 Eqpt -- Kits																					
FY 2001 Eqpt -- Kits																					
FY 2002 Eqpt -- kits																					
FY 2003 Eqpt -- kits																					
FY 2004 Eqpt -- kits																					
FY 2005 Eqpt -- kits																					
TC Equip-Kits																					
Total Installment																					
Total Procurement Cost		4.8		3.5		16.4															24.7

Installation of hardware is included in the contract price.

**INDIVIDUAL MODIFICATION**

Date February 2000

**MODIFICATION TITLE:** Re-Power [MOD 18] 1-00-05-0014

**MODELS OF SYSTEMS AFFECTED:** M1 = 0, IPM1 = 0, M1A1 = 1671, M1A2 = 1097 TOTAL = 2768

**DESCRIPTION / JUSTIFICATION:**

This modification is Phase II of the Abrams engine campaign plan. It is intended to reduce the O&S cost of the Abrams Tank engine. This mod will reengine the active component Abrams fleet with a lighter, more fuel efficient and more reliable engine.

**DEVELOPMENT STATUS / MAJOR DEVELOPMENT MILESTONES:** **PLANNED** **ACCOMPLISHED**

Preliminary Design Review	1Q01
Critical Design Review	4Q01
Development Test & Eval	4Q03
IPR Decision (LRIP)	2Q04
MWO Approved	3Q04

**Installation Schedule:**

Pr Yr	FY 1999				FY 2000				FY 2001				FY 2002				FY 2003			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
<b>Totals</b>																				
<b>Inputs</b>																				
<b>Outputs</b>																				

  

	FY 2004				FY 2005				FY 2006				FY 2007				To Complete	Totals
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4		
<b>Inputs</b>			112	112													2544	2768
<b>Outputs</b>			112	112													2544	2768

**METHOD OF IMPLEMENTATION:** ADMINISTRATIVE LEADTIME: 24 Months PRODUCTION LEADTIME: 24 Months

Contract Dates:	FY 1999	Enter Date	FY 2000	Enter Date	FY 2001	Enter Date
Delivery Date:	FY 1999	Enter Date	FY 2000	Enter Date	FY 2001	Enter Date

INDIVIDUAL MODIFICATION

Date February 2000

MODIFICATION TITLE (Cont): Re-Power [MOD 18] 1-00-05-0014

FINANCIAL PLAN: (\$ in Millions)

	FY 1998 and Prior		FY 1999		FY 2000		FY 2001		FY 2002		FY 2003		FY 2004		FY 2005		TC		TOTAL		
	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	
RDT&E																					
PROCUREMENT																					
Kit Quantity									224				404		393		1747			2768	
Installation Kits																					
Installation Kits, Nonrecurring																					
Equipment																					
Equipment, Nonrecurring									123.9				237.8		237.2		1082.0			1680.9	
Engineering Change Orders																					
Data																					
Training Equipment																					
Support Equipment																					
Other																					
Interim Contractor Support																					
Installation of Hardware																					
FY 1998 & Prior Eqpt -- Kits																					
FY 1999 Eqpt -- Kits																					
FY 2000 Eqpt -- Kits																					
FY 2001 Eqpt -- Kits																					
FY 2002 Eqpt -- kits																					
FY 2003 Eqpt -- kits																					
FY 2004 Eqpt -- kits																					
FY 2005 Eqpt -- kits																					
TC Equip-Kits																					
Total Installment																					
Total Procurement Cost									123.9				237.8		237.2		1082.0			1680.9	

**INDIVIDUAL MODIFICATION**

Date February 2000

**MODIFICATION TITLE:** Electronics Obsolescence [MOD 19] 1-00-05-0015

**MODELS OF SYSTEMS AFFECTED:** M1 = 0, IPM1 = 0, M1A1 = 4327 , M1A2 = 1174 TOTAL = 5501

**DESCRIPTION / JUSTIFICATION:**

The M1A1 electronics employ 1980s or earlier technology. The focal points of M1A1 electronics are the turret network box (TNB) and hull network box (HNB). Both of these components have numerous obsolete parts that are only available through cannibalization of discarded components. Cannibalization is not a viable means to sustain the Abrams until 2030. Replacing the analog TNBs and HNBs with new digital units eliminates the associated obsolescence and allows us to introduce a built-in-test capability to support the Force XXI maintenance structure. Digital TNBs and HNBs also allow future electronic growth by providing unpopulated Versa Module European (VME) card slots.

The Abrams M1A2 continuous electronics enhancement program (CEEP) is to upgrade the tank's electronics following a five (5) year cycle. Every five years obsolete components would be replaced with new components, thereby creating a moving technology baseline and resolving the obsolescence issues.

**DEVELOPMENT STATUS / MAJOR DEVELOPMENT MILESTONES:** PLANNED ACCOMPLISHED

Redesigned TNB	Critical Design Review	2Q00
	Developmental Test & Eval	2Q00
	IPR Decision	1Q01
Redesigned HNB	Preliminary Design Review	2Q00
	Critical Design Review	4Q00
	Developmental Test & Eval	4Q00
	IPR Decision	2Q01

**Installation Schedule:**

Pr Yr	FY 1999				FY 2000				FY 2001				FY 2002				FY 2003			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
<b>Totals</b>																				
<b>Inputs</b>																				
<b>Outputs</b>																				

  

	FY 2004				FY 2005				FY 2006				FY 2007				To Complete	Totals
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4		
<b>Inputs</b>																		
<b>Outputs</b>																		

**METHOD OF IMPLEMENTATION:** ADMINISTRATIVE LEADTIME: 24 Months PRODUCTION LEADTIME: 24 Months

Contract Dates: FY 1999 Enter Date FY 2000 Enter Date FY 2001 Enter Date  
 Delivery Date: FY 1999 Enter Date FY 2000 Enter Date FY 2001 Enter Date

INDIVIDUAL MODIFICATION

Date

February 2000

MODIFICATION TITLE (Cont): Electronic Obsolescence [MOD 19] 1-00-05-0015

FINANCIAL PLAN: (\$ in Millions)

	FY 1998 and Prior		FY 1999		FY 2000		FY 2001		FY 2002		FY 2003		FY 2004		FY 2005		TC		TOTAL		
	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	
RDT&E																					
PROCUREMENT																					
Kit Quantity																					
Installation Kits																					
Installation Kits, Nonrecurring																					
Equipment																					
Equipment, Nonrecurring							8.9		23.5		6.0		45.5		62.6			1376.1		1522.6	
Engineering Change Orders																					
Data																					
Training Equipment																					
Support Equipment																					
Other																					
Interim Contractor Support																					
Installation of Hardware																					
FY 1998 & Prior Eqpt -- Kits																					
FY 1999 Eqpt -- Kits																					
FY 2000 Eqpt -- Kits																					
FY 2001 Eqpt -- Kits																					
FY 2002 Eqpt -- kits																					
FY 2003 Eqpt -- kits																					
FY 2004 Eqpt -- kits																					
FY 2005 Eqpt -- kits																					
TC Equip-Kits																					
Total Installment																					
Total Procurement Cost							8.9		23.5		6.0		45.5		62.6			1376.1		1522.6	

## Exhibit P-40, Budget Item Justification Sheet

Date:

February 2000

Appropriation / Budget Activity/Serial No:

PROCUREMENT OF WPNS &amp; TRKD CMBT VEHS / 1 / Tracked Combat Vehicles

P-1 Item Nomenclature:

M1A1D RETROFIT (GA0720)

Program Elements for Code B Items:

Code:

Other Related Program Elements:

	Prior Years	FY 1997	FY 1998	FY 1999	FY 2000	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	To Complete	Total Prog
Proc Qty							85	107	10	233	998	1433
Gross Cost	0.0	0.0	0.0	0.0	0.0	0.9	11.6	12.9	6.0	24.0	116.1	171.6
Less PY Adv Proc												
Plus CY Adv Proc												
Net Proc (P-1)	0.0	0.0	0.0	0.0	0.0	0.9	11.6	12.9	6.0	24.0	116.1	171.6
Initial Spares												
Total Proc Cost	0.0	0.0	0.0	0.0	0.0	0.9	11.6	12.9	6.0	24.0	116.1	171.6
Flyaway U/C												
Wpn Sys Proc U/C												

DESCRIPTION: The Abrams M1A1-D is an M1A1 Abrams Main Battle Tank that has been equipped with a digital applique command and control package. The A-Kit consists of an Upgraded Tank Commander's Panel (UTCP) and associated peripheral hardware. The B-Kit is the Applique computer display and keyboard. The C-Kit provides a far target capability by integrating a North Finding Module (NFM) and a Digital Interface Unit (DIU) to process raw tank data and format messages for transmittal to the Applique computer. Some of the tanks slated for this improvement also have to be modified to accept the Enhanced Position Locating and Reporting System, commonly referred to as the EPLRS radio.

JUSTIFICATION: This digitization modification will enable the M1A1 to exchange digital command and control data in the Army's Common Operating Environment format used by the more advanced M1A2 SEP tanks and other members of the combined arms team. It is a key component of the Army's plan to field the First Digital Division in CY00.

<b>Exhibit P-5, Weapon WTCV Cost Analysis</b>		Appropriation/ Budget Activity/Serial No: PROCUREMENT OF WPNS & TRKD CMBT VEHS / 1 / Tracked Combat Vehicles			P-1 Line Item Nomenclature: M1A1D RETROFIT (GA0720)			Weapon System Type:			Date: February 2000		
<b>Cost Elements</b>	ID CD	<b>FY 98</b>			<b>FY 99</b>			<b>FY 00</b>			<b>FY 01</b>		
		TotalCost	Qty	UnitCost	TotalCost	Qty	UnitCost	TotalCost	Qty	UnitCost	TotalCost	Qty	UnitCost
		\$000	Each	\$000	\$000	Each	\$000	\$000	Each	\$000	\$000	Each	\$000
1. Upgraded Tank Commander's Panel (A-Kit)/1													
2. Applique Computer (B-Kit)/1													
3. Far Target (C-Kit) /1													
4. Government Support (including Test)											891		
Total											891		
1/Funded under SSN GA0700													

## Exhibit P-5a, Budget Procurement History and Planning

Date:  
February 2000

Appropriation / Budget Activity/Serial No: PROCUREMENT OF WPNS & TRKD CMBT VEHS / 1 / Tracked Combat Vehicles		Weapon System Type:			P-1 Line Item Nomenclature: M1A1D RETROFIT (GA0720)					
WBS Cost Elements: Fiscal Years	Contractor and Location	Contract Method and Type	Location of PCO	Award Date	Date of First Delivery	QTY Each	Unit Cost \$000	Specs Avail Now?	Date Revsn Avail	RFP Issue Date
1. Upgraded Tank Commander's Panel (A-Kit)*/1	GDLS /2	CPFF	TACOM							
2. Applique Computer (B-Kit Integration Hardware) /1	PM, FBCB2	GFE	Ft. Monmouth, NJ							
3. Far Target (C-Kit) /1	GDLS/2	CPFF	TACOM							
4. Government Support (including test)	Various	Various	Various	N/A	N/A	N/A				

**REMARKS:**

1. Funded under SSN GA0700
2. General Dynamics Land Systems, Sterling Heights, MI

**Exhibit P-40, Budget Item Justification Sheet**

Date: February 2000

Appropriation / Budget Activity/Serial No:  
PROCUREMENT OF WPNS & TRKD CMBT VEHS / 1 / Tracked Combat Vehicles

P-1 Item Nomenclature:  
SYSTEM ENHANCEMENT PGM: SEP M1A2 (GA0730)

Program Elements for Code B Items:

Code:  
Other Related Program Elements:

	Prior Years	FY 1997	FY 1998	FY 1999	FY 2000	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	To Complete	Total Prog
Proc Qty						16	20	30	29	27	505	627
Gross Cost	0.0	0.0	0.0	0.0	0.0	36.1	58.3	87.2	89.8	89.7	1621.4	1982.5
Less PY Adv Proc												
Plus CY Adv Proc												
Net Proc (P-1)	0.0	0.0	0.0	0.0	0.0	36.1	58.3	87.2	89.8	89.7	1621.4	1982.5
Initial Spares												
Total Proc Cost	0.0	0.0	0.0	0.0	0.0	36.1	58.3	87.2	89.8	89.7	1621.4	1982.5
Flyaway U/C												
Wpn Sys Proc U/C						2.3	2.9	2.9	3.1	3.3	3.2	3.2

**DESCRIPTION:** The M1A2 Systems Enhancement Program (SEP) upgrades 627 M1A2 tanks to the newer SEP configuration. This modification updates the on-board computer systems of the M1A2 tank and incorporates Second Generation Forward Looking Infra-Red (FLIR) technology into the Gunner's Primary Sight (GPS) and the Commander's Independent Thermal Viewer (CITV). The total system design also easily accommodates future computer system upgrades. The SEP tank features the Army's Common Operating Environment software, which facilitates the digital flow of command and control data among the members of the combined arms team.

**JUSTIFICATION:** The SEP Program will modernize the U.S. Army's armor force to enhance the combat effectiveness of the Abrams Tank Fleet and maintain the key elements of the tank industrial base.

<b>Exhibit P-5, Weapon WTCV Cost Analysis</b>		Appropriation/ Budget Activity/Serial No: PROCUREMENT OF WPNS & TRKD CMBT VEHS / 1 / Tracked Combat Vehicles			P-1 Line Item Nomenclature: SYSTEM ENHANCEMENT PGM: SEP M1A2 (GA0730)			Weapon System Type:			Date: February 2000		
<b>Cost Elements</b>	ID CD	<b>FY 98</b>			<b>FY 99</b>			<b>FY 00</b>			<b>FY 01</b>		
		TotalCost	Qty	UnitCost	TotalCost	Qty	UnitCost	TotalCost	Qty	UnitCost	TotalCost	Qty	UnitCost
		\$000	Each	\$000	\$000	Each	\$000	\$000	Each	\$000	\$000	Each	\$000
1. SEP	A										19783	16	1236
2. FLIR											13200	16	825
3. M1A2 Depot-Maintenance Pre-MOD											3166		
<b>TOTAL</b>											<b>36149</b>		

### Exhibit P-5a, Budget Procurement History and Planning

Date:  
February 2000

Appropriation / Budget Activity/Serial No:  
PROCUREMENT OF WPNS & TRKD CMBT VEHS / 1 / Tracked  
Combat Vehicles

Weapon System Type:

P-1 Line Item Nomenclature:  
SYSTEM ENHANCEMENT PGM: SEP M1A2 (GA0730)

WBS Cost Elements: Fiscal Years	Contractor and Location	Contract Method and Type	Location of PCO	Award Date	Date of First Delivery	QTY Each	Unit Cost \$000	Specs Avail Now?	Date Revsn Avail	RFP Issue Date
1. SEP Kit FY 01	GDLS /1	SS/FFP	TACOM-Warren	Jun-01	Dec-02	16	1236	Yes		Sep 00
2. FLIR FY 01	Various	SS/FFP	CECOM	Nov-00	Jun-02	16	825	Yes		Sep 00

REMARKS: /1 General Dynamics Land System, Sterling Hgts, MI









**Exhibit P-40, Budget Item Justification Sheet**

Date: February 2000

Appropriation / Budget Activity/Serial No: PROCUREMENT OF WPNS & TRKD CMBT VEHS / 1 / Tracked Combat Vehicles  
 P-1 Item Nomenclature: ABRAMS UPGRADE PROGRAM (GA0750)

Program Elements for Code B Items: Code: Other Related Program Elements:

	Prior Years	FY 1997	FY 1998	FY 1999	FY 2000	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	To Complete	Total Prog
Proc Qty	306	120	120	120	120	80	80	80	43	24		1093
Gross Cost	1230.0	500.8	569.6	688.2	680.4	551.8	560.5	567.8	379.9	280.8	453.5	6463.3
Less PY Adv Proc	411.9	297.2	258.2	259.9	260.7	213.4	174.4	194.4	98.6	91.5		2260.3
Plus CY Adv Proc	709.1	258.2	259.9	260.7	213.4	174.4	194.4	98.6	91.5			2260.3
Net Proc (P-1)	1527.2	461.7	571.3	689.1	633.1	512.9	580.5	472.0	372.7	189.3	453.5	6463.2
Initial Spares	21.4	9.5	13.4	9.7	9.7	14.8	23.4	25.2	25.3	25.3	113.9	291.6
Total Proc Cost	1548.6	471.2	584.7	698.8	642.8	527.7	603.9	497.2	398.0	214.6	567.4	6754.8
Flyaway U/C	3.6	3.6	4.1	5.3	5.3	6.0	6.0	6.1	7.1	9.3		
Wpn Sys Proc U/C	4.0	4.2	4.7	5.7	5.7	6.9	7.0	7.1	8.8	11.7		

**DESCRIPTION:** The Abrams Tank Upgrade Program supports the Department of Army vision for the future. The Upgrade Program reconfigures M1 Tanks to the M1A2 configuration making it a more survivable and lethal tank. This includes the Commander's Independent Thermal Viewer (CITV), Improved Commander's Weapon Station (ICWS), Position Navigation (POS/NAV) equipment, Radio Interface Unit (RIU), Core Architecture, D. U. Armor, 120mm Gun and Nuclear, Biological and Chemical (NBC) protection. In FY99 2nd Generation Forward Looking Infrared (FLIR) and vehicle core electronic upgrades will be cut into production.

**JUSTIFICATION:** The Upgrade Program will modernize the U.S. Army's armor force to enhance the combat effectiveness of the Abrams Tank Fleet and maintain the key elements of the tank industrial base.

<b>Exhibit P-5, Weapon WTCV Cost Analysis</b>		Appropriation/ Budget Activity/Serial No: PROCUREMENT OF WPNS & TRKD CMBT VEHS / 1 / Tracked Combat Vehicles			P-1 Line Item Nomenclature: ABRAMS UPGRADE PROGRAM (GA0750)			Weapon System Type:			Date: February 2000		
Cost Elements	ID CD	FY 98			FY 99			FY 00			FY 01		
		TotalCost	Qty	UnitCost	TotalCost	Qty	UnitCost	TotalCost	Qty	UnitCost	TotalCost	Qty	UnitCost
		\$000	Each	\$000	\$000	Each	\$000	\$000	Each	\$000	\$000	Each	\$000
1. Basic Vehicle	A				366023	120	3050	327431	120	2729	247045	80	3088
2. Armor					39784	120	332	56814	121	470	48918	120	408
3. H/TEU													
4. Engine Refurb					23881	120	199	28502	120	238	18921	80	237
5. Transmission					24131	120	201	24962	120	208	18866	80	236
6. Final Drive					1369	240	6	1909	240	8	1363	160	9
7. Fire Control					1905	120	16	2630	120	22	1857	80	23
8. Track					5116	18720		5333	18720		3603	12480	
9. Roadwheels					1417	3840		1438	3840		972	2560	
10. Gun Mounts					2526	60	42	2526	60	42	1786	40	45
11. Gun					14601	120	122	24384	120	203	16911	80	211
12. Driver's Night Viewer					657	120	5	667	120	6	451	80	6
13. Basic Issue Items					915	120	8	929	120	8	657	80	8
14. MILSTRIPS/RIK					864	120	7	877	120	7	592	80	7
15. VIS					1238	120	10	1277	120	11	895	80	11
16. Special Tools & Test Sets					16458			18200			10800		
17. System Technical Support (STS)					40686			36945			58877		
18. Project Mgt Administration					3146			3192			3235		
19. Matrix Support					5793			7349			7447		
20. Auxiliary Services					88			2496			2530		
21. Engineering Support					2830			7181			7277		
22. Quality Support					1023			1558			1579		
23. Testing					5136			6335			4450		
24. Transportation (FDT)					417			423			286		
25. Total Package Fielding					9751			12995			13248		
26. II Gen FLIR					101026	120	842	88693	120	739	56181	80	702
27. Pre Mod Depot Maint					15172	120	126	15348	120	128	12201	80	153
28. GDLS SEP-S/ISA					2256						10880		
29. Industrial Base/"Shut Down"													
<b>Gross P-1 End Cost</b>					<b>688209</b>	120	5735	<b>680394</b>	120	5670	<b>551828</b>	80	6898
Less: Prior Year Adv Proc					259891			260738			213406		
<b>Net P-1 Full Funding Cost</b>					<b>428318</b>			<b>419656</b>			<b>338422</b>		
Plus: P-1 CY Adv Proc					260738			213406			174445		
Other Non P-1 Costs													
Initial Spares					9699			9713			14807		
Mods													
<b>TOTAL</b>					<b>698755</b>			<b>642775</b>			<b>527674</b>		

## Exhibit P-5a, Budget Procurement History and Planning

Date:  
February 2000

Appropriation / Budget Activity/Serial No: PROCUREMENT OF WPNS & TRKD CMBT VEHS / 1 / Tracked Combat Vehicles				Weapon System Type:		P-1 Line Item Nomenclature: ABRAMS UPGRADE PROGRAM (GA0750)				
WBS Cost Elements:	Contractor and Location	Contract Method and Type	Location of PCO	Award Date	Date of First Delivery	QTY Each	Unit Cost \$000	Specs Avail Now?	Date Revsn Avail	RFP Issue Date
<b>1. Basic Vehicle</b>										
FY 99	GDLS/1	/2(4)	TACOM-Warren	Feb-99	Aug-99	120	3050	Yes		Jan 95
FY 00	GDLS/1	/2(5)	TACOM-Warren	Feb-00	Aug-00	120	2729	Yes		Jan 95
FY 01	GDLS/1	SS/FFP	TACOM-Warren	Feb-01	Aug-01	80	3088	Yes		Sep 99
<b>2. Armor/3</b>										
FY 99	LITCO/4	SS/CPFF	DOE/5	Jan-98	Feb-99	120	332	NA		NA
FY 00	LITCO/4	SS/CPFF	DOE/5	Jan-99	Feb-00	121	470	NA		NA
FY 01	LITCO/4	SS/CPFF	DOE/5	Jan-00	Feb-01	120	408	NA		NA
<b>3. H/TEU</b>										
FY 98	GDLS/1	Option	TACOM-ACALA	Mar-97	Feb-98	VAR	VAR	Yes		Feb 96
<b>4. Engine Refurb/6</b>										
FY 99	Allied/Signal/7	SS/FFP/C	TACOM-Warren	Feb-98	Feb-99	120	199	Yes		Sep 97
FY 00	Allied/Signal/7	Option	TACOM-Warren	Jan-99	Feb-00	120	238	Yes		Sep 97
FY 01	Allied/Signal/7	Option	TACOM-Warren	Feb-00	Feb-01	80	237	Yes		Sep 97
<b>5. Transmission</b>										
FY 99	Allison Transmission Div/8	Option	TACOM-Warren	Feb-98	Feb-99	120	201	Yes		Dec 96
FY 00	Allison Transmission Div/8	Option	TACOM-Warren	Feb-99	Feb-00	120	208	Yes		Dec 96
FY 01	Allison Transmission Div/8	S/FFP/C	TACOM-Warren	Jul-00	Feb-01	80	236	Yes		Jun 99

**REMARKS:** /1. General Dynamics Land System, Warren, MI /8. Allison Transmission Div, GM Corp, Indianapolis, IN  
 /2. SS/FFP/M5  
 /3. Armor Production leads tank production  
 /4. Bechtel BXWT, Idaho Falls, ID  
 /5. Department of Energy  
 /6. Awards are against a Navy BOA Contract therefore no RFP issued only letter with new requirements  
 /7. AlliedSignal/Control & Accessories, Tucson, AZ

**Exhibit P-5a, Budget Procurement History and Planning**

Date: February 2000

Appropriation / Budget Activity/Serial No: PROCUREMENT OF WPNS & TRKD CMBT VEHS / 1 / Tracked  
 Combat Vehicles

Weapon System Type:

P-1 Line Item Nomenclature: ABRAMS UPGRADE PROGRAM (GA0750)

WBS Cost Elements:	Contractor and Location	Contract Method and Type	Location of PCO	Award Date	Date of First Delivery	QTY Each	Unit Cost \$000	Specs Avail Now?	Date Revsn Avail	RFP Issue Date
<b>6. Final Drive</b>										
FY 99	LOC Performance, Inc/1	Option	TACOM-Warren	Dec-97	Feb-99	240	6	Yes		Apr 95
FY 00	LOC Performance, Inc/1	C/FFP	TACOM-Warren	Dec-98	Feb-00	240	8	Yes		May 98
FY 01	LOC Performance, Inc/1	Option	TACOM-Warren	Dec-99	Feb-01	160	9	Yes		May 98
<b>7. Fire Control</b>										
FY 99	Hughes/2/Variou	Variou	TACOM-Warren	Var	Feb-99	120	16	Yes		Var
FY 00	Hughes/2/Variou	Variou	TACOM-Warren	Var	Feb-00	120	22	Yes		Var
FY 01	Hughes/2/Variou	Variou	TACOM-Warren	Var	Feb-01	80	23	Yes		Var
<b>8. Track</b>										
FY 99	Goodyear Tire & Rubber/3	SS/FFP	TACOM-Warren	May-98	Feb-99	18720		Yes		Dec 97
FY 00	Goodyear Tire & Rubber/3	Option	TACOM-Warren	Mar-99	Feb-00	18720		Yes		Dec 97
FY 01	Goodyear Tire & Rubber/3	Option	TACOM-Warren	Mar-00	Feb-01	12480		Yes		Dec 97
<b>9. Roadwheels</b>										
FY 99	B&C Corp/4	/5	TACOM-Warren	Jan-98	Feb-99	3840		Yes		Sep 95
FY 00	TBD	/5	TACOM-Warren	May-00	Feb-00	3840		Yes		Sep 98
FY 01	TBD	/5	TACOM-Warren	Jan-00	Feb-01	2560		Yes		Sep 98

**REMARKS:**

- /1. Loc Performance, Inc, Plymouth, Mi
- /2. Hughes Aircraft, El Segundo, CA
- /3. Goodyear Tire & Rubber Co., Akron, OH
- /4. B&C Corp, Barberton, OH
- /5. Requirement Contract/FFP

**Exhibit P-5a, Budget Procurement History and Planning**

Date:  
February 2000

Appropriation / Budget Activity/Serial No: PROCUREMENT OF WPNS & TRKD CMBT VEHS / 1 / Tracked Combat Vehicles		Weapon System Type:			P-1 Line Item Nomenclature: ABRAMS UPGRADE PROGRAM (GA0750)					
WBS Cost Elements: Fiscal Years	Contractor and Location	Contract Method and Type	Location of PCO	Award Date	Date of First Delivery	QTY Each	Unit Cost \$000	Specs Avail Now?	Date Revsn Avail	RFP Issue Date
<b>10. Gun Mounts</b>										
FY 99	RIA/1	WR		Apr-98	Feb-99	60	42	Yes		NA
FY 00	RIA/1	WR		Mar-99	Feb-00	60	42	Yes		NA
FY 01	RIA/1	WR		Apr-00	Feb-01	40	45	Yes		NA
<b>11. Gun</b>										
FY 99	Watervliet Arsenal	WR		Mar-98	Feb-99	120	122	Yes		NA
FY 00	Watervliet Arsenal	WR		Mar-99	Feb-00	120	203	Yes		NA
FY 01	Watervliet Arsenal	WR		Mar-00	Feb-01	80	211	Yes		NA
<b>12. Driver's Night Viewer</b>										
FY 99	CECOM NICP	REQ		Sep-98	Feb-99	120	5	Yes		NA
FY 00	CECOM NICP	REQ		Feb-00	Feb-00	120	6	Yes		NA
FY 01	CECOM NICP	REQ		Feb-01	Feb-01	80	6	Yes		NA
<b>13. Basic Issue Items</b>										
FY 99	TACOM-ACALA	WR		Jun-98	Feb-99	120	8	Yes		NA
FY 00	TACOM-ACALA	WR		Feb-00	Feb-00	120	8	Yes		NA
FY 01	TACOM-ACALA	WR		Feb-01	Feb-01	80	8	Yes		NA

**REMARKS:** /1. RIA, Rock Island Arsenal, Rock Island, IL produces 50% of gun mounts.  
The remainder are procured with the GDLS contract.

### Exhibit P-5a, Budget Procurement History and Planning

Date: February 2000

Appropriation / Budget Activity/Serial No: PROCUREMENT OF WPNS & TRKD CMBT VEHS / 1 / Tracked Combat Vehicles		Weapon System Type:			P-1 Line Item Nomenclature: ABRAMS UPGRADE PROGRAM (GA0750)					
WBS Cost Elements: Fiscal Years	Contractor and Location	Contract Method and Type	Location of PCO	Award Date	Date of First Delivery	QTY Each	Unit Cost \$000	Specs Avail Now?	Date Revsn Avail	RFP Issue Date
<b>14. MILSTRIPS/RIK</b>										
FY 99	NA	REQ/WR		Various	Feb-99	120	7	Yes		NA
FY 00	NA	REQ/WR		Various	Feb-00	120	7	Yes		NA
FY 01	NA	REQ/WR		Various	Feb-01	80	7	Yes		NA
<b>15. VIS/1</b>										
FY 99	Grumman/2	Option	CECOM	Apr-98	Feb-99	120	10	Yes		Sep 91
FY 00	Grumman/2	Option	CECOM	Aug-99	Feb-00	120	11	Yes		Sep 91
FY 01	Grumman/2	Option	CECOM	Apr-00	Feb-01	80	11	Yes		Sep 91
<b>26. II Gen FLIR</b>										
FY 99	Various	SS/FFP	CECOM	Nov-97	Feb-99	120	842	Yes		Sep 96
FY 00	Various	Option	CECOM	Dec-98	Feb-00	120	739	Yes		Sep 96
FY 01	Various	Option	CECOM	Nov-99	Feb-01	80	702	Yes		Sep 96
<b>28. GDLS SEP-S/ISA</b>										
FY 99	GDLS/3	/4(4)	TACOM-Warren	Feb-99	Aug-99	120	200	N/A		N/A
FY 00	GDLS/3	/4(5)	TACOM-Warren	Feb-00	Aug-00	120	236	N/A		N/A
FY 01	GDLS/3	SS/FFP	TACOM-Warren	Feb-01	Aug-01	80	275	N/A		N/A

**REMARKS:**  
 /1. VIS, Vehicular Intercommunication System  
 /2. Grumman Aerospace Corp, Bethpage, NY  
 /3. General Dynamics Land Systems, Warren, MI  
 /4. SS/FFP/M5











**Exhibit P-40, Budget Item Justification Sheet**

Date: February 2000

Appropriation / Budget Activity/Serial No: PROCUREMENT OF WPNS & TRKD CMBT VEHS / 1 / Tracked Combat Vehicles  
 P-1 Item Nomenclature: ABRAMS UPGRADE PROGRAM (ADV PROC) (GA0750)

Program Elements for Code B Items: Code: Other Related Program Elements:

	Prior Years	FY 1997	FY 1998	FY 1999	FY 2000	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	To Complete	Total Prog
Proc Qty												
Gross Cost	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Less PY Adv Proc												
Plus CY Adv Proc	546.2	258.2	259.9	260.7	213.4	174.4	194.4	98.6	91.5	0.0		2097.4
Net Proc (P-1)	546.2	258.2	259.9	260.7	213.4	174.4	194.4	98.6	91.5	0.0	0.0	2097.4
Initial Spares												
Total Proc Cost	546.2	258.2	259.9	260.7	213.4	174.4	194.4	98.6	91.5	0.0	0.0	2097.4
Flyaway U/C												
Wpn Sys Proc U/C												

**DESCRIPTION:** Advance procurement for long lead materials to support procurement for the Abrams Upgrade Program.

**JUSTIFICATION:** Without advance procurement funds, procurement of components, assemblies and raw materials to support procurement, long lead time would not be possible and would cause a break in production.

<b>Advance Procurement Requirements Analysis-Funding (P-10A)</b>				First System Award Date: Feb 00				First System Completion Date: Aug 00				Date: February 2000			
Appropriation / Budget Activity/Serial No: PROCUREMENT OF WPNS & TRKD COMBT VEHS/1/TRACKED COMBAT VEHICLES							P-1 Line Item Nomenclature / Weapon System: ABRAMS UPGRADE PROGRAM (ADV PROC) (GA0750)								
(\$ in Millions)															
	PLT (mos)	When Rqd (mos)	Pr Yrs	FY97	FY98	FY99	FY00	FY01	FY02	FY03	FY04	FY05	To Comp	Total	
End Item Quantity:	*			120	120	120	80	80	80	43	24				
1. Basic Vehicle	18	6		142.3	6.4	17.5	10.8	10.5	9.3	1.8	40.6			239.1	
1.1 Termination Liability					86.8	73.3	79.2	41.3	62.3	20.1	15.9			378.9	
2. Armor	19	6		9.8	10.0	10.2	11.3	11.5	11.7	15.0				79.6	
3. H/TEU	13	6		6.7										6.7	
4. Engine Refurb	20	6		4.0	16.4	16.2	9.6	9.5	9.5	5.2	2.9			73.3	
5. Transmission	19	6		23.4	24.1	25.0	16.9	17.1	17.5	9.6	5.5			139.0	
6. Final Drives	16	6		1.4	1.4	1.9	1.4	1.4	1.4	0.9	0.5			10.2	
7. Fire Control	16	6		38.3	1.8	2.6	1.8	1.8	1.9	1.1	0.7			50.0	
8. Track	19	6		5.7	5.1	5.3	3.6	3.7	3.7	2.0	1.2			30.3	
9. Roadwheels	16	6		1.4	1.4	1.4	1.0	1.0	1.0	0.6	0.3			8.1	
10. Gun Mounts	16	6		2.6	2.5	2.5	1.8	1.8	1.9	1.2	0.6			14.9	
11. Gun	16	6		10.6	14.1	23.9	16.9	17.2	17.5	10.6	6.1			116.9	
12. Driver's Night Viewer	13	6		0.7	0.7	0.7	0.5	0.5	0.5	0.3	0.1			3.8	
13. Basic Issue Items	16	6		0.8	0.9	0.9	0.7	0.7	0.7	0.4	0.2			5.3	
14. MILSTRIPS/RIK	16	6		0.5	0.6	0.6	0.4	0.4	0.4	0.2	0.1			3.5	
15. VIS	16	6		1.0	1.1	1.2	0.8	0.8	0.9	0.5	0.3			6.8	
26. II Gen FLIR	20	8		9.0	84.3	77.5	53.5	52.3	51.6	27.6	15.5			371.4	
29. GDLS SEP-S/ISA					2.2		3.3	2.9	2.8	1.5	0.8			13.5	
<b>Total Advance Procurement</b>				258.2	259.9	260.7	213.4	174.4	194.4	98.6	91.5			1551.2	
<p>Description:</p> <p>* PLT excludes First Article Test (FAT) or other special test requirements for new producers or other factors.  ALT is based on current long term contracts. ALT increase with new starts/new contractors/new contracts.  PLT includes the 6 months requirement for components prior to tank delivery.</p>															

**Advance Procurement Requirements Analysis-Budget Justification (P-10B)**

Date: February 2000

Appropriation / Budget Activity/Serial No:  
PROCUREMENT OF WPNS & TRKD CMBT VEHS / 1 / Tracked Combat Vehicles

P-1 Line Item Nomenclature / Weapon System:  
ABRAMS UPGRADE PROGRAM (ADV PROC) (GA0750)

(\$ in Millions)									
	PLT (mos)	Quantity Per Assembly	Unit Cost	2000			2001		
				Qty	Contract Forecast Date	Total Cost Request	Qty	Contract Forecast Date	Total Cost Request
End Item	*								
1. Basic Vehicle	18	1	0.1	80	Various	10.8	80	Various	10.5
1.1 Termination Liability						79.2			41.3
2. Armor	19	1	0.1	120	Jan 00	11.3	121	Jan 01	11.5
3. H/TEU	13								
4. Engine Refurb	20	1	0.1	80	Feb 00	9.6	80	Feb 01	9.5
5. Transmission	19	1	0.2	80	Jul 00	16.9	80	Jul 01	17.1
6. Final Drives	16	2	0.0	160	Mar 00	1.4	160	Dec 00	1.4
7. Fire Control	16	1	0.0	80	Various	1.8	80	Various	1.8
8. Track	19	156	0.0	12480	Mar 00	3.6	12480	Mar 01	3.7
9. Roadwheels	16	32	0.0	2560	Feb 00	1.0	2560	Jan 01	1.0
10. Gun Mounts	16	1	0.0	40	Apr 00	1.8	40	Apr 01	1.8
11. Gun	16	1	0.2	80	Mar 00	16.9	80	Mar 01	17.2
12. Driver's Night Viewer	13	1	0.0	80	Jul 00	0.5	80	Jul 01	0.5
13. Basic Issue Items	16	1	0.0	80	Sep 00	0.7	80	Sep 01	0.7
14. MILSTRIPS/RIK	16	1	0.0	80	Various	0.4	80	Various	0.4
15. VIS	16	1	0.0	80	Apr 00	0.8	80	Apr 01	0.8
26. II Gen FLIR	20	1	0.7	80	Dec 99	53.5	80	Nov 00	52.3
29. GDLS SEP-S/ISA						3.3			2.9
<b>Total Advance Procurement</b>						<b>213.4</b>			<b>174.4</b>

Description:  
 \* PLT excludes First Article Test (FAT) or other special test requirements for new producers or other factors.  
 ALT is based on current long term contracts. ALT increase with new starts/new contractors/new contracts.  
 PLT includes the 6 months requirement for components prior to tank delivery.

**Advance Procurement Requirements Analysis-Present Value Analysis (P-10C)**

Date: February 2000

Appropriation / Budget Activity/Serial No:  
PROCUREMENT OF WPNS & TRKD CMBT VEHS / 1 / Tracked Combat Vehicles

P-1 Line Item Nomenclature / Weapon System:  
ABRAMS UPGRADE PROGRAM (ADV PROC) (GA0750)

(\$ in Millions)												
	Pr Yrs	1997	1998	1999	2000	2001	2002	2003	2004	2005	To Comp	Total
<b>Proposal w/o AP</b>												
Then Year Cost	1230	501	570	688	680	552	561	568	380	281	452	6463
Constant Year Cost	1292	513	578	694	676	541	541	537	352	255	377	6356
Present Value	1513	565	619	723	685	534	519	501	320	225	298	6502
<b>AP Proposal</b>												
Then Year Cost	1528	462	571	689	633	513	581	472	373	189	452	6463
Constant Year Cost	1628	473	579	695	629	503	560	446	346	172	377	6408
Present Value	1948	521	620	724	638	496	537	416	314	152	298	6664
<b>AP Savings (Difference)</b>												
Then Year Cost	298	-39	1	1	-47	-39	20	-96	-7	-92		
Constant Year Cost	336	-40	1	1	-47	-38	19	-91	-6	-83		52
Present Value	435	-44	1	1	-47	-38	18	-85	-6	-73		162

Remarks:

Advance Procurement Requirements Analysis-Execution (P-10D)													Date: February 2000			
Appropriation / Budget Activity/Serial No: PROCUREMENT OF WPNS & TRKD CMBT VEHS / 1 / Tracked Combat Vehicles							P-1 Line Item Nomenclature / Weapon System: ABRAMS UPGRADE PROGRAM (ADV PROC) (GA0750)									
(\$ in Millions)																
	PLT (mos)	1998					1999					2000		2001		
		Qty	Contract Forecast Date	Actual Contract Date	Total Cost Request	Actual Contract Cost	Qty	Contract Forecast Date	Actual Contract Date	Total Cost Request	Actual Contract Cost	Qty	Contract Forecast Date	Qty	Contract Forecast Date	
End Item	*															
1. Basic Vehicle	18	120	Various		5.4		120	Various		19.5		80	Various	80	Various	
1.1 Termination Liability					86.8					73.3						
2. Armor	19	120	Feb 98	Jan 98	10.0	10.0	120	Jan 99	Jan 99	10.2	10.2	120	Jan 00	121	Jan 01	
3. H/TEU	13															
4. Engine Refurb	20	120	Jan 98	Feb 98	16.4	16.4	120	Jun 99	Nov 98	16.2	16.2	80	Feb 00	80	Feb 01	
5. Transmission	19	120	Feb 98	Feb 98	24.1	24.1	120	Feb 99	Mar 99	25.0	25.0	80	Jul 00	80	Jul 01	
6. Final Drives	16	240	Jan 98	Jan 98	1.4	1.4	240	Dec 98	Dec 98	1.9	1.9	160	Mar 00	160	Dec 00	
7. Fire Control	16	120	Various		1.9		120	Var		2.6		80	Various	80	Various	
8. Track	19	18720	Apr 98	May 98	5.1	5.1	18720	Mar 99	Feb 99	5.3	5.3	12480	Mar 00	12480	Mar 01	
9. Roadwheels	16	3840	Apr 98	Jan 98	1.4	1.4	3840	Feb 00		1.4		2560	Feb 00	2560	Jan 01	
10. Gun Mounts	16	60	Apr 98	Apr 98	2.5	2.5	60	Apr 99	Mar 99	2.5	2.5	40	Apr 00	40	Apr 01	
11. Gun	16	120	Apr 98	Sep 98	14.1	14.1	120	Mar 99	Jan 99	23.9	23.9	80	Mar 00	80	Mar 01	
12. Driver's Night Viewer	13	120	Jul 98	Oct 98	0.7	0.7	120	Feb 00		0.7		80	Jul 00	80	Jul 01	
13. Basic Issue Items	16	120	Apr 98	Jun 98	0.9	0.9	120	Feb 00		0.9		80	Sep 00	80	Sep 01	
14. MILSTRIPS/RIK	16	120	Various		0.6		120	Various		0.6		80	Various	80	Various	
15. VIS	16	120	Jun 98	Apr 98	1.2	1.1	120	Aug 99	Aug 99	1.3	1.2	80	Apr 00	80	Apr 01	
26. II Gen FLIR	20	120	Various		84.3		120	Nov 99	Jan 99	77.5	72.8	80	Dec 99	80	Nov 00	
29. GDLS SEP-S/ISA				Sep 98	0.3	0.3										
<b>Total Advance Procurement</b>					257.1	78.0				262.9	159.0					

**Description:**

\* PLT excludes First Article Test (FAT) or other special test requirements for new producers or other factors.  
 ALT is based on current long term contracts. ALT increase with new starts/new contractors/new contracts.  
 PLT includes the 6 months requirement for components prior to tank delivery.

Advance Procurement Requirements Analysis-Obligations/Expenditures (P-10E)													Date: February 2000		
Appropriation / Budget Activity/Serial No: PROCUREMENT OF WPNS & TRKD CMBT VEHS / 1 / Tracked Combat Vehicles							P-1 Line Item Nomenclature / Weapon System: ABRAMS UPGRADE PROGRAM (ADV PROC) (GA0750)								
(\$ in Millions)															
	Starting Balance	FY 98											Total Obl/Exp (Cum)	Ending Balance (Cum)	
		1997			1998										
		Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep		
<b>FY 99</b>															
Termination Liability Sche	73.3														73.3
Total Expenditures	260.7														260.7
<b>FY 00</b>															
Termination Liability Sche	79.2														79.2
<b>FY 01</b>															
Termination Liability Sche	41.3														41.3

Narrative: The requirements for all elements of cost are based on prior history and lead times. The procurement for the DECU's, Transmissions, Final Drives, Fire Control, Track, Roadwheels, VIS, II GEN FLIR are Firm Fixed Price Contracts and have no termination liability profile within the contract. The funding is required to purchase hardware in time to reduce the overall procurement leadtime of the M1A2 Abrams major end item.

**Advance Procurement Requirements Analysis-Obligations/Expenditures (P-10E)**

Date: February 2000

Appropriation / Budget Activity/Serial No:  
PROCUREMENT OF WPNS & TRKD CMBT VEHS / 1 / Tracked Combat Vehicles

P-1 Line Item Nomenclature / Weapon System:  
ABRAMS UPGRADE PROGRAM (ADV PROC) (GA0750)

(\$ in Millions)

	Starting Balance	FY 99												Total Obl/Exp (Cum)	Ending Balance (Cum)	
		1998			1999											
		Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep			
<b>FY 99</b>																
Termination Liability Sche	73.3			.2	.2	.3	.3	2.3	4.1	7.3	8.2	9.3	9.0	41.2	32.1	
Total Expenditures	260.7								.9	1.0	.9	2.9	23.6	29.2	231.5	
<b>FY 00</b>																
Termination Liability Sche	79.2														79.2	
<b>FY 01</b>																
Termination Liability Sche	41.3														41.3	

Narrative:

Advance Procurement Requirements Analysis-Obligations/Expenditures (P-10E)													Date: February 2000		
Appropriation / Budget Activity/Serial No: PROCUREMENT OF WPNS & TRKD CMBT VEHS / 1 / Tracked Combat Vehicles							P-1 Line Item Nomenclature / Weapon System: ABRAMS UPGRADE PROGRAM (ADV PROC) (GA0750)								
(\$ in Millions)															
	Starting Balance	FY 00											Total Obl/Exp (Cum)	Ending Balance (Cum)	
		1999			2000										
		Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep		
<b>FY 99</b>															
Termination Liability Sche	32.1	10.6	9.6	11.9										32.1	
Total Expenditures	231.5	10.0	16.1	9.9										36.0	195.5
<b>FY 00</b>															
Termination Liability Sche	79.2							3.6	4.4	7.8	8.9	10.1	9.7	44.5	34.7
<b>FY 01</b>															
Termination Liability Sche	41.3														41.3
Narrative:															

**Advance Procurement Requirements Analysis-Obligations/Expenditures (P-10E)**

Date: February 2000

Appropriation / Budget Activity/Serial No:  
PROCUREMENT OF WPNS & TRKD CMBT VEHS / 1 / Tracked Combat Vehicles

P-1 Line Item Nomenclature / Weapon System:  
ABRAMS UPGRADE PROGRAM (ADV PROC) (GA0750)

(\$ in Millions)

	Starting Balance	FY 01											Total Obl/Exp (Cum)	Ending Balance (Cum)			
		2000			2001												
		Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug			Sep		
<b>FY 99</b> Termination Liability Sche Total Expenditures	195.5															195.5	
<b>FY 00</b> Termination Liability Sche	34.7	11.5	10.4	12.8												34.7	.0
<b>FY 01</b> Termination Liability Sche	41.3							3.0	3.7	6.7	7.6	8.6	8.3		37.9	3.4	

Narrative:

**Advance Procurement Requirements Analysis-Obligations/Expenditures (P-10E)**

Date: February 2000

Appropriation / Budget Activity/Serial No:  
PROCUREMENT OF WPNS & TRKD CMBT VEHS / 1 / Tracked Combat Vehicles

P-1 Line Item Nomenclature / Weapon System:  
ABRAMS UPGRADE PROGRAM (ADV PROC) (GA0750)

(\$ in Millions)

	Starting Balance	FY 02											Total Obl/Exp (Cum)	Ending Balance (Cum)		
		2001			2002											
		Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug			Sep	
<b>FY 99</b> Termination Liability Sche Total Expenditures	195.5															195.5
<b>FY 00</b> Termination Liability Sche	.0															.0
<b>FY 01</b> Termination Liability Sche	3.4	2.3	1.1													3.4

Narrative:

**Exhibit P-40, Budget Item Justification Sheet**

Date: February 2000

Appropriation / Budget Activity/Serial No: PROCUREMENT OF WPNS & TRKD CMBT VEHS / 1 / Tracked Combat Vehicles  
 P-1 Item Nomenclature: MODIFICATIONS LESS THAN \$5.0M (TCV-WTCV) (GA0925)

Program Elements for Code B Items: Code: Other Related Program Elements:

	Prior Years	FY 1997	FY 1998	FY 1999	FY 2000	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	To Complete	Total Prog
Proc Qty												
Gross Cost	10.6	0.0	0.0	0.0	0.2	0.0	0.0	0.0	0.0	0.0	0.0	10.7
Less PY Adv Proc												
Plus CY Adv Proc												
Net Proc (P-1)	10.6	0.0	0.0	0.0	0.2	0.0	0.0	0.0	0.0	0.0	0.0	10.7
Initial Spares												
Total Proc Cost	10.6	0.0	0.0	0.0	0.2	0.0	0.0	0.0	0.0	0.0	0.0	10.7
Flyaway U/C												
Wpn Sys Proc U/C												

**DESCRIPTION:** This funding provides for the procurement of hardware kits, their application, and fielding support costs of \$2.0M or less for Tracked Combat Vehicles.

**JUSTIFICATION:**  
**BATTLEFIELD COMBAT IDENTIFICATION SYSTEM:** The Battlefield Combat Identification System (BCIS) is a millimeter wave Question and Answer system that will provide positive identification of friendly ground vehicles to minimize battlefield fratricide and enhance combat effectiveness. The BCIS is a designated Army Horizontal Technology Integration (HTI) initiative. Starting in FY00 BCIS are required for the M88A1 Recovery Vehicle through PM Combat ID.

**Exhibit P-40, Budget Item Justification Sheet**

Date: February 2000

Appropriation / Budget Activity/Serial No: PROCUREMENT OF WPNS & TRKD CMBT VEHS / 1 / Tracked Combat Vehicles  
 P-1 Item Nomenclature: ITEMS LESS THAN \$5.0M (TCV-WTCV) (GL3100)

Program Elements for Code B Items: Code: Other Related Program Elements:

	Prior Years	FY 1997	FY 1998	FY 1999	FY 2000	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	To Complete	Total Prog
Proc Qty												
Gross Cost	17.5	0.0	0.0	0.1	0.1	0.1	0.1	0.1	0.2	0.2	0.0	18.5
Less PY Adv Proc												
Plus CY Adv Proc												
Net Proc (P-1)	17.5	0.0	0.0	0.1	0.1	0.1	0.1	0.1	0.2	0.2	0.0	18.5
Initial Spares												
Total Proc Cost	17.5	0.0	0.0	0.1	0.1	0.1	0.1	0.1	0.2	0.2	0.0	18.5
Flyaway U/C												
Wpn Sys Proc U/C												

**DESCRIPTION:** Provides for procurement/assembly of full tracked vehicle organizational maintenance tool/shop sets. This equipment has multi-applications and is essential for effective maintenance on all tracked vehicles.

**JUSTIFICATION:** Required to provide organizational maintenance personnel with equipment essential to maintain full tracked vehicles in an acceptable state of readiness. Funding of this program will establish and maintain the operational capability of the Bradley Fighting Vehicle, M1 Tank, etc.

<b>Exhibit P-5, Weapon WTCV Cost Analysis</b>		Appropriation/ Budget Activity/Serial No: PROCUREMENT OF WPNS & TRKD CMBT VEHS / 1 / Tracked Combat Vehicles			P-1 Line Item Nomenclature: ITEMS LESS THAN \$5.0M (TCV-WTCV) (GL3100)			Weapon System Type:			Date: February 2000		
<b>Cost Elements</b>	ID CD	<b>FY 98</b>			<b>FY 99</b>			<b>FY 00</b>			<b>FY 01</b>		
		TotalCost	Qty	UnitCost	TotalCost	Qty	UnitCost	TotalCost	Qty	UnitCost	TotalCost	Qty	UnitCost
		\$000	Each	\$000	\$000	Each	\$000	\$000	Each	\$000	\$000	Each	\$000
1. Shop Set, Contact and Emergency Repair 4940-00-754-0737 G352					28	2	14						
2. Tool Set, Full Tracked Vehicle, Org Maint, Suppl 2 G649					61	8	8	137	10	14	135	9	15
Total					89			137			135		

**Exhibit P-40, Budget Item Justification Sheet**

Date: February 2000

Appropriation / Budget Activity/Serial No: PROCUREMENT OF WPNS & TRKD CMBT VEHS / 1 / Tracked Combat Vehicles  
 P-1 Item Nomenclature: PRODUCTION BASE SUPPORT (TCV-WTCV) (GA0050)

Program Elements for Code B Items: Code: Other Related Program Elements:

	Prior Years	FY 1997	FY 1998	FY 1999	FY 2000	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	To Complete	Total Prog
Proc Qty												
Gross Cost	1449.7	9.0	8.3	9.7	8.8	9.3	10.0	9.9	10.4	10.6	0.0	1535.8
Less PY Adv Proc												
Plus CY Adv Proc												
Net Proc (P-1)	1449.7	9.0	8.3	9.7	8.8	9.3	10.0	9.9	10.4	10.6	0.0	1535.8
Initial Spares												
Total Proc Cost	1449.7	9.0	8.3	9.7	8.8	9.3	10.0	9.9	10.4	10.6	0.0	1535.8
Flyaway U/C												
Wpn Sys Proc U/C												

**DESCRIPTION:** This program provides for Provision of Industrial Facilities (PIF). Funds are used to establish, modernize, expand or replace facilities owned by the Army. It provides Production Support Equipment Replacement (PSR) and Modernization (MOD) to Government owned equipment, real property used in production and production testing of Weapons and Tracked Combat Vehicles. This program also provides funding for the Layaway of Industrial Facilities (LIF) for preservation of equipment for the portions of plants which are no longer required for active production.

**JUSTIFICATION:** The FY01 request supports PSR to Government owned equipment at Lima Army Tank Plant (LATP) and replace and rehabilitate unscheduled/unplanned emergency repairs of Government owned production machinery, equipment and facility items currently in use at the contractor plant in Muskegon, MI. and Scranton, Pa. Included are rehab of a Vertical/Horizontal Mill Machines, purchase Heat Recovery Units, Coal Conveyor Belt at LATP and rebrick Salt Bath located at Scranton. Also, funding will be used for packing, crating, handling & transportation of Government owned Equipment retained for future production.

<b>Exhibit P-5, Weapon WTCV Cost Analysis</b>		Appropriation/ Budget Activity/Serial No: PROCUREMENT OF WPNS & TRKD CMBT VEHS / 1 / Tracked Combat Vehicles			P-1 Line Item Nomenclature: PRODUCTION BASE SUPPORT (TCV-WTCV) (GA0050)			Weapon System Type:			Date: February 2000		
<b>Cost Elements</b>	ID CD	<b>FY 98</b>			<b>FY 99</b>			<b>FY 00</b>			<b>FY 01</b>		
		TotalCost	Qty	UnitCost	TotalCost	Qty	UnitCost	TotalCost	Qty	UnitCost	TotalCost	Qty	UnitCost
		\$000	Each	\$000	\$000	Each	\$000	\$000	Each	\$000	\$000	Each	\$000
49X4281 LIF, Layaway/Redistribution Various Government & Contractor Facilities Provides for plant clearance and restoration of those areas no longer required for active production. Packing, crating, handling & transportation GFE retained for future prod.					338			351			344		
Provides non-routine maintenance of real property facilities, I.P.E. purchase & rehab. of production equipment. Machinery consist of Welding, Milling and Shot Blast Machines. Project also provides for Plant Utilities. Provides replacement/rehab of government owned equipment at contractor plants. Also, project covers Unplanned Repairs of equipment and Unplanned Regulatory Requirements. Work is to be performed at Lima Army Tank Plant, Scranton and Muskegon facilities					9332			8501			8906		
<b>TOTAL</b>					<b>9670</b>			<b>8852</b>			<b>9250</b>		

**Exhibit P-40, Budget Item Justification Sheet**

Date: February 2000

Appropriation / Budget Activity/Serial No: PROCUREMENT OF WPNS & TRKD CMBT VEHS / 2 / Weapons and Other Combat Vehicles  
 P-1 Item Nomenclature: ARMOR MACHINE GUN, 7.62MM M240 SERIES (G13000)

Program Elements for Code B Items: Code: A Other Related Program Elements:

	Prior Years	FY 1997	FY 1998	FY 1999	FY 2000	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	To Complete	Total Prog
Proc Qty	49876	2034	1500	1198	4297	1196	752	818	1072	728		63471
Gross Cost	183.3	18.4	14.4	11.4	38.4	12.4	8.1	8.4	11.1	11.1	0.0	317.1
Less PY Adv Proc												
Plus CY Adv Proc												
Net Proc (P-1)	183.3	18.4	14.4	11.4	38.4	12.4	8.1	8.4	11.1	11.1	0.0	317.1
Initial Spares												
Total Proc Cost	183.3	18.4	14.4	11.4	38.4	12.4	8.1	8.4	11.1	11.1	0.0	317.1
Flyaway U/C												
Wpn Sys Proc U/C												

**DESCRIPTION:** The M240B Machine Gun is a ground version of the M240 Machine Gun, the 7.62mm Medium Machine Gun class weapon designed as a coaxial/pintle-mounted weapon for tanks and light armored vehicles. The M240B is an air cooled, link-belt fed, gas operated weapon. The weapon features fixed head space, which permits rapid changing of the barrels. The principle difference between the M240 and the M240B is the addition of a flash suppressor, front sight, carrying handle for the barrel, buttstock, pistol grip, bipod, heat shield and rear sight assembly. The M240B Machine Gun may also be tripod-mounted and used in conjunction with a traversing and elevating mechanism and a flex mount pintle. The FY97 thru FY05 buys the M240B configuration in the Armor Machine Gun Series.

**JUSTIFICATION:** The M240B Medium Machine Gun is an infantry version of the M240 Armored Machine Gun intended to replace the M60 Series Machine Gun in light infantry, mechanized infantry, and combat engineer units. The US Army has identified a need to upgrade its current inventory of 7.62mm Medium Machine Guns in order to provide the dismounted infantryman a more reliable, accurate, and lethal medium machine gun to suppress and destroy enemy personnel, lightly armored vehicles, and fortified positions.

<b>Exhibit P-5, Weapon WTCV Cost Analysis</b>		Appropriation/ Budget Activity/Serial No: PROCUREMENT OF WPNS & TRKD CMBT VEHS / 2 / Weapons and Other Combat			P-1 Line Item Nomenclature: ARMOR MACHINE GUN, 7.62MM M240 SERIES (G13000)			Weapon System Type:			Date: February 2000		
<b>Cost Elements</b>	ID CD	<b>FY 98</b>			<b>FY 99</b>			<b>FY 00</b>			<b>FY 01</b>		
		TotalCost \$000	Qty Each	UnitCost \$000	TotalCost \$000	Qty Each	UnitCost \$000	TotalCost \$000	Qty Each	UnitCost \$000	TotalCost \$000	Qty Each	UnitCost \$000
1. Hardware (Incls Flex Mount & Blank Firing Device)	A				5160	673	8	3614	438	8	10587	1196	9
					4572	525	9	20327	2678	8			
								12122	1181	10			
2. Engineering Support - In House Support					987			1004			786		
3. Quality Assurance (ARDEC)								96			122		
4. Integrated Logistics Support					79			91			93		
5. Engineering Change Proposals					161			545			204		
6. Testing											300		
7. Fielding					440			565			357		
<b>TOTAL</b>													
					11399			38364			12449		

### Exhibit P-5a, Budget Procurement History and Planning

Date:  
February 2000

Appropriation / Budget Activity/Serial No: PROCUREMENT OF WPNS & TRKD CMBT VEHS / 2 / Weapons and Other Combat Vehicles		Weapon System Type:			P-1 Line Item Nomenclature: ARMOR MACHINE GUN, 7.62MM M240 SERIES (G13000)					
WBS Cost Elements: Fiscal Years	Contractor and Location	Contract Method and Type	Location of PCO	Award Date	Date of First Delivery	QTY Each	Unit Cost \$000	Specs Avail Now?	Date Revsn Avail	RFP Issue Date
Hardware (Incls Flex Mount & Blank Firing Device)										
FY 99	FN Manuf Inc., Columbia, SC	Option	TACOM - Rock Island	Dec-98	Dec-98	673	8	Yes	No	
	FN Manuf Inc., Columbia, SC	SS/FFP M-3(3)	TACOM - Rock Island	Jul-99	Aug-00	525	9	Yes	No	
FY00	FN Manuf Inc., Columbia, SC	SS/FFP M-3(3)	TACOM - Rock Island	Dec-99	Nov-00	438	8	Yes	No	
	FN Manuf Inc., Columbia, SC	Option	TACOM - Rock Island	Dec-99	Feb-01	2678	8	Yes	No	
	TBS	C/FFP	TACOM-Rock Island	Sep-00	May-02	1181	10	Yes	No	
FY01	TBS	Option	TACOM-Rock Island	Dec-00	May-03	1196	9	Yes	No	

REMARKS: The M240 contract was established as a 3-year multiyear contract (FY97,99,00).







**Exhibit P-40, Budget Item Justification Sheet**

Date: February 2000

Appropriation / Budget Activity/Serial No: PROCUREMENT OF WPNS & TRKD CMBT VEHS / 2 / Weapons and Other Combat Vehicles  
 P-1 Item Nomenclature: MACHINE GUN, 5.56MM (SAW) (G12900)

Program Elements for Code B Items: Code: A Other Related Program Elements:

	Prior Years	FY 1997	FY 1998	FY 1999	FY 2000	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	To Complete	Total Prog
Proc Qty	66137	3802	406	1525	3698						4280	79848
Gross Cost	165.8	12.0	3.4	5.7	9.9	0.0	0.0	0.0	0.0	0.0	18.1	214.8
Less PY Adv Proc												
Plus CY Adv Proc												
Net Proc (P-1)	165.8	12.0	3.4	5.7	9.9	0.0	0.0	0.0	0.0	0.0	18.1	214.8
Initial Spares												
Total Proc Cost	165.8	12.0	3.4	5.7	9.9	0.0	0.0	0.0	0.0	0.0	18.1	214.8
Flyaway U/C												
Wpn Sys Proc U/C												

**DESCRIPTION:** The Squad Automatic Weapon (SAW) is a lightweight (22 pounds with 200 rounds of ammunition), 5.56mm, one-man operated weapon capable of delivering a sustained volume of automatic, accurate, and lethal fire at ranges of up to 800 meters. The Army configuration was changed Oct 89 to include a spare barrel, additional heat shield and barrel bag.

**JUSTIFICATION:** The sustained fire capability and increased range are urgently needed throughout infantry rifle squads in order to enhance their survivability. This lightweight, highly mobile machine gun will be used by infantry, light infantry, airborne infantry, mechanized infantry and elements of the air cavalry units, as well as non-infantry units. This procurement profile will equip selected elements of the above mentioned units on a priority basis.

<b>Exhibit P-5, Weapon WTCV Cost Analysis</b>		Appropriation/ Budget Activity/Serial No: PROCUREMENT OF WPNS & TRKD CMBT VEHS / 2 / Weapons and Other Combat			P-1 Line Item Nomenclature: MACHINE GUN, 5.56MM (SAW) (G12900)			Weapon System Type:			Date: February 2000		
<b>Cost Elements</b>	ID CD	<b>FY 98</b>			<b>FY 99</b>			<b>FY 00</b>			<b>FY 01</b>		
		TotalCost \$000	Qty Each	UnitCost \$000	TotalCost \$000	Qty Each	UnitCost \$000	TotalCost \$000	Qty Each	UnitCost \$000	TotalCost \$000	Qty Each	UnitCost \$000
1. Hardware	A				4444	1525	3	8596	3698	2			
2. GFM													
3. Engineering Support (In-House)					64			185					
4. Quality Assurance (ARDEC)					35			60					
5. Testing (TECOM)					60			100					
6. Engineering Change Proposals (ECP's)					24			116					
7. ILS					40			75					
8. Fielding					763			771					
9. Engineering Study					235								
<b>TOTAL</b>					<b>5665</b>			<b>9903</b>					

### Exhibit P-5a, Budget Procurement History and Planning

Date:  
February 2000

Appropriation / Budget Activity/Serial No:  
PROCUREMENT OF WPNS & TRKD CMBT VEHS / 2 / Weapons and  
Other Combat Vehicles

Weapon System Type:

P-1 Line Item Nomenclature:  
MACHINE GUN, 5.56MM (SAW) (G12900)

WBS Cost Elements: Fiscal Years	Contractor and Location	Contract Method and Type	Location of PCO	Award Date	Date of First Delivery	QTY Each	Unit Cost \$000	Specs Avail Now?	Date Revsn Avail	RFP Issue Date
Hardware FY99	FN Mfg Co., Inc., Columbia SC	SS/FFP OPTION	TACOM- Rock Island	Nov-98	Aug-99	1525	3	Yes	No	
FY00	FN Mfg Co., Inc., Columbia SC	SS/FFP OPTION	TACOM-Rock Islan	Jan-00	Mar-00	3198	2	Yes	No	
FY00	TBS	TBS	TACOM-Rock Island	Apr-00	Mar-01	500	2	Yes	No	

REMARKS:





**Exhibit P-40, Budget Item Justification Sheet**

Date:

February 2000

Appropriation / Budget Activity/Serial No:

PROCUREMENT OF WPNS & TRKD CMBT VEHS / 2 / Weapons and Other Combat Vehicles

P-1 Item Nomenclature:

GRENADE LAUNCHER, AUTO, 40MM, MK19-3 (G13400)

Program Elements for Code B Items:

Code:

A

Other Related Program Elements:

	Prior Years	FY 1997	FY 1998	FY 1999	FY 2000	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	To Complete	Total Prog
Proc Qty	13403	2150	400	697	1389	581	772	195				19587
Gross Cost	214.2	33.0	7.7	15.1	22.9	11.8	15.2	13.7	0.0	0.0	0.0	333.5
Less PY Adv Proc												
Plus CY Adv Proc												
Net Proc (P-1)	214.2	33.0	7.7	15.1	22.9	11.8	15.2	13.7	0.0	0.0	0.0	333.5
Initial Spares												
Total Proc Cost	214.2	33.0	7.7	15.1	22.9	11.8	15.2	13.7	0.0	0.0	0.0	333.5
Flyaway U/C												
Wpn Sys Proc U/C												

**DESCRIPTION:** The MK19, Mod 3 is a self-powered, air-cooled, blowback, 40mm automatic grenade launcher capable of a cyclic rate of 325-375 rounds per minute. It will engage point targets up to 1,500 meters and provide suppressive fire up to 2,200 meters. Component items for this system include the 40mm assembly group 1 and the MK64 mount.

**JUSTIFICATION:** The weapon will be mounted on the High Mobility Multi-Purpose Wheeled Vehicle (HMMWV), the Armored Personnel Carrier family of vehicles and the M88A1 Recovery Vehicle. During static defensive operations, it will be ground employed utilizing the M3 Tripod Mount. It will replace select M2 cal .50 and M60 7.62mm machine guns in mechanized, light infantry, engineer, military police, and other combat support and combat service support units. Procurement will help reduce critical supply position for high-priority equipment readiness code (ERC) A shortages in Europe, Korea, and CONUS requirements. The Universal Pintle Adaptor is being incorporated on the MK64 Mount to improve the accuracy and dispersion of the MK19-3 when used on the HMMWV application.

<b>Exhibit P-5, Weapon WTCV Cost Analysis</b>		Appropriation/ Budget Activity/Serial No: PROCUREMENT OF WPNS & TRKD CMBT VEHS / 2 / Weapons and Other Combat			P-1 Line Item Nomenclature: GRENADE LAUNCHER, AUTO, 40MM, MK19- 3 (G13400)			Weapon System Type:			Date: February 2000		
<b>Cost Elements</b>	ID CD	<b>FY 98</b>			<b>FY 99</b>			<b>FY 00</b>			<b>FY 01</b>		
		TotalCost	Qty	UnitCost	TotalCost	Qty	UnitCost	TotalCost	Qty	UnitCost	TotalCost	Qty	UnitCost
		\$000	Each	\$000	\$000	Each	\$000	\$000	Each	\$000	\$000	Each	\$000
1. Hardware MK64 ERC A Mounts	A				10838	697	16	21075	1389	15	9756	581	17
					1073	853	1						
2. Round Removal Tool (GFM)								174			66		
3. Engineering Support (In-House)					976			888			1303		
4. Quality Assurance (ARDEC)								60			83		
5. Integrated Logistics Support (ILS)					155			194			186		
6. Engineering Change Proposals (ECP's)					1495			31			86		
7. Engineering Studies													
8. Testing (TECOM)					325			300			194		
9. Fielding					202			161			161		
<b>TOTAL</b>					<b>15064</b>			<b>22883</b>			<b>11835</b>		

### Exhibit P-5a, Budget Procurement History and Planning

Date:  
February 2000

Appropriation / Budget Activity/Serial No: PROCUREMENT OF WPNS & TRKD CMBT VEHS / 2 / Weapons and Other Combat Vehicles		Weapon System Type:			P-1 Line Item Nomenclature: GRENADE LAUNCHER, AUTO, 40MM, MK19-3 (G13400)					
WBS Cost Elements: Fiscal Years	Contractor and Location	Contract Method and Type	Location of PCO	Award Date	Date of First Delivery	QTY Each	Unit Cost \$000	Specs Avail Now?	Date Revsn Avail	RFP Issue Date
Hardware FY99	SACO Defense, Saco, Maine	SS/FFP	TACOM - Rock Island	Dec-98	Jul-00	138	16	Yes	No	
		M-3(2) M-3(3)			Aug-00	559	16	Yes	No	
FY00	SACO Defense, Saco, Maine	SS/FFP	TACOM - Rock Island	Dec-99	Feb-01	489	15	Yes	No	
		M-3(3)								
FY01	SACO Defense, Saco, Maine	Option	TACOM - Rock Island	Dec-99	Jul-01	900	15	Yes	No	
		SS/FFP W/Option			Mar-01	Apr-02	581	17	Yes	No

REMARKS:





**Exhibit P-40, Budget Item Justification Sheet**

Date: February 2000

Appropriation / Budget Activity/Serial No: PROCUREMENT OF WPNS & TRKD CMBT VEHS / 2 / Weapons and Other Combat Vehicles  
 P-1 Item Nomenclature: M16 RIFLE (G14900)

Program Elements for Code B Items: Code: A Other Related Program Elements:

	Prior Years	FY 1997	FY 1998	FY 1999	FY 2000	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	To Complete	Total Prog
Proc Qty	542667	15583	11297	16464	12479	10314	3416	6557	20475	19571	20592	679415
Gross Cost	247.7	6.4	4.4	6.8	5.7	4.8	2.0	3.1	9.4	9.2	9.9	309.4
Less PY Adv Proc												
Plus CY Adv Proc												
Net Proc (P-1)	247.7	6.4	4.4	6.8	5.7	4.8	2.0	3.1	9.4	9.2	9.9	309.4
Initial Spares												
Total Proc Cost	247.7	6.4	4.4	6.8	5.7	4.8	2.0	3.1	9.4	9.2	9.9	309.4
Flyaway U/C												
Wpn Sys Proc U/C												

**DESCRIPTION:** The M16A4 Rifle is a 5.56mm gas operated, magazine fed weapon capable of firing either semiautomatic or three-round burst. It is identical to the currently fielded M16A2 Rifle, with the exception that the upper receiver contains an integral mounting rail with a detachable carrying handle/rear sight. The M16A4 in combination with the M5 adapter rail forms the Modular Weapon System (MWS) which provides soldiers the flexibility to configure their weapons with those accessories required to fulfill an assigned mission.

**JUSTIFICATION:** The M16A4 Rifle was developed as part of the Modular Weapon System (MWS) Program. The U.S. Army identified a need to improve the versatility of the M4 Carbine and the M16A2 Rifle. This was to be accomplished by providing multiple mounting surfaces on the M4 and M16A2 to allow a combination of various accessories to be simultaneously mounted on the weapons. The M4 Carbine already contained an integral rail on the upper receiver. The M16A4 provides the same capability on the rifle. Future production of the rifle will be in the M16A4 configuration. Funding in FY01 is to provide continuous production and to support the current MWS fielding schedule. A total of 116,848 M16A1's have been converted to M16A2's lowering the "to complete" quantity to 20,592.

Exhibit P-5, Weapon WTCV Cost Analysis		Appropriation/ Budget Activity/Serial No: PROCUREMENT OF WPNS & TRKD CMBT VEHS / 2 / Weapons and Other Combat			P-1 Line Item Nomenclature: M16 RIFLE (G14900)			Weapon System Type:			Date: February 2000		
Cost Elements	ID CD	FY 98			FY 99			FY 00			FY 01		
		TotalCost \$000	Qty Each	UnitCost \$000	TotalCost \$000	Qty Each	UnitCost \$000	TotalCost \$000	Qty Each	UnitCost \$000	TotalCost \$000	Qty Each	UnitCost \$000
1. Rifle (Includes Slings & Magazine)	A				5852 571	15121 1343	0.387 0.425	5094	12479	0.408	4210	10314	0.408
2. Engineering Support (In-House)					133			247			180		
3. Engineering Change Proposals (ECP's)								112			62		
4. Quality Assurance (ARDEC)								30			75		
5. Integrated Logistics Support (ILS)								46			70		
6. Fielding					215			190			196		
<b>TOTAL</b>					<b>6771</b>			<b>5719</b>			<b>4793</b>		

## Exhibit P-5a, Budget Procurement History and Planning

Date: February 2000

Appropriation / Budget Activity/Serial No: PROCUREMENT OF WPNS & TRKD CMBT VEHS / 2 / Weapons and Other Combat Vehicles		Weapon System Type:			P-1 Line Item Nomenclature: M16 RIFLE (G14900)					
WBS Cost Elements: Fiscal Years	Contractor and Location	Contract Method and Type	Location of PCO	Award Date	Date of First Delivery	QTY Each	Unit Cost \$000	Specs Avail Now?	Date Revsn Avail	RFP Issue Date
1. Rifle (Includes Slings and Magazines)										
FY99	Colt's Mfg Co., Inc. Hartford, CT TBS	Option C/FFP	TACOM - Rock Island TACOM - Rock Island	Jan-99 Apr-00	Mar-00	15121	0.387	Yes	No	
					Feb-02	1343	0.425	Yes	No	
FY00	TBS	C/FFP	TACOM - Rock Island	Apr-00	Apr-02	12479	0.408	Yes	No	
FY01	TBS	Option	TACOM - Rock Island	Jan-01	Apr-03	10314	0.408	Yes	No	

REMARKS:

FY 00 / 01 BUDGET PRODUCTION SCHEDULE							P-1 Item Nomenclature: M16 RIFLE (G14900)													Date: February 2000												
COST ELEMENTS	MFR	FY	SERV	PROC QTY Each	ACCEP. PRIOR TO 1 OCT	BAL DUE AS OF 1 OCT	Fiscal Year 99												Fiscal Year 00												LATER	
							Calendar Year 99												Calendar Year 00													
							OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP		
1. Hardware																																
M16A2	1	98&PR	A	552.3	517.2	35.1	0.8	0.7	0.8	0.7	0.8	0.7	0.8	0.7	0.8	0.7	0.8	0.7	0.8	0.7	0.8	0.7	0.8	0.7	0.8	0.7	0.8	0.7	17.1			
M16A2	1	98&PR	FMS	40.4	11.0	29.4	0.7	0.8	0.7	0.8	0.7	0.8	0.7	0.8	0.7	0.8	0.7	0.8	0.7	0.8	0.7	0.8	0.7	0.8	0.7	0.8	0.7	0.8	11.4			
M16A4	2	98&PR	A	17.3		17.3									0.6	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	0.1			4.6				
M16A4	2	99	A	15.1		15.1				A															0.9	1.0	1.0	1.0	1.0	1.0	1.0	8.2
M16A4	3	99	A	1.3		1.3																					A			1.3		
M16A4	3	00	A	12.5		12.5																					A			12.5		
M16A4	3	01	A	10.3		10.3																								10.3		
				649.2	528.2	121.0	1.5	4.5	1.5	1.5	1.5	1.5	1.5	1.5	2.1	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	65.4		
							OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP		
MFR	PRODUCTION RATES				REACHED	MFR Number	ADMIN LEAD TIME		MFR	TOTAL	REMARKS																					
	NAME / LOCATION	MIN.	1-8-5	MAX.	D +		Prior 1 Oct.	After 1 Oct.	After 1 Oct.	After 1 Oct.	The FY98 Army program commences the start of the M16A4 Rifle production. FY99-01 MFR leadtime extended to maintain continuity in production rates.																					
1	FNMI Mfg, Columbia, SC	1	8	17	18	2	INITIAL	0	3	14	17																					
2	Colt's MFG, Hartford, CT	1	4	10	18	3	REORDER																									
3	TBS	1	4	10	18		INITIAL	3	6	24	30																					
							REORDER		3	27	30																					
							INITIAL																									
							REORDER																									
							INITIAL																									
							REORDER																									
							INITIAL																									
							REORDER																									





**Exhibit P-40, Budget Item Justification Sheet**

Date: February 2000

Appropriation / Budget Activity/Serial No: PROCUREMENT OF WPNS & TRKD CMBT VEHS / 2 / Weapons and Other Combat Vehicles  
 P-1 Item Nomenclature: XM107, CAL. 50 SNIPER RIFLE (G01500)

Program Elements for Code B Items: Code: B Other Related Program Elements:

	Prior Years	FY 1997	FY 1998	FY 1999	FY 2000	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	To Complete	Total Prog
Proc Qty						230	162					392
Gross Cost	0.0	0.0	0.0	0.0	1.1	3.1	2.1	0.0	0.0	0.0	0.0	6.4
Less PY Adv Proc												
Plus CY Adv Proc												
Net Proc (P-1)	0.0	0.0	0.0	0.0	1.1	3.1	2.1	0.0	0.0	0.0	0.0	6.4
Initial Spares												
Total Proc Cost	0.0	0.0	0.0	0.0	1.1	3.1	2.1	0.0	0.0	0.0	0.0	6.4
Flyaway U/C												
Wpn Sys Proc U/C												

**DESCRIPTION:** The XM107 is a caliber .50, sniper rifle. The primary mission of this rifle is to engage and defeat materiel targets out to ranges of 1,700 and 2,000 meters. The secondary role is anti-personnel and Explosive Ordnance Disposal (EOD) at shorter ranges.

**JUSTIFICATION:** Current Army Sniper system, M24, 7.62mm, has limited range and low deposition of energy on target. The M24 is not effective against materiel targets past 800 meters. The curent M24 is not effective in Explosive Ordnance Disposal. The FY 01 procurement will enable the soldier to engage and defeat materiel targets out to ranges of 1,700 and 2,000 meters.

Exhibit P-5, Weapon WTCV Cost Analysis		Appropriation/ Budget Activity/Serial No: PROCUREMENT OF WPNS & TRKD CMBT VEHS / 2 / Weapons and Other Combat			P-1 Line Item Nomenclature: XM107, CAL. 50 SNIPER RIFLE (G01500)			Weapon System Type:			Date: February 2000		
Cost Elements	ID CD	FY 98			FY 99			FY 00			FY 01		
		TotalCost \$000	Qty Each	UnitCost \$000	TotalCost \$000	Qty Each	UnitCost \$000	TotalCost \$000	Qty Each	UnitCost \$000	TotalCost \$000	Qty Each	UnitCost \$000
1. Hardware Weapons Laser Protector & Anti-reflection Device	B										1946	230	8
											104	230	
2. ESIP/QA								77			425		
3. Testing								33			350		
4. Integrated Logistical Support								35			70		
5. Fielding											50		
6. ECPs											140		
7. Reprogrammed								988					
TOTAL								1133			3085		

### Exhibit P-5a, Budget Procurement History and Planning

Date:  
February 2000

Appropriation / Budget Activity/Serial No:  
PROCUREMENT OF WPNS & TRKD CMBT VEHS / 2 / Weapons and  
Other Combat Vehicles

Weapon System Type:

P-1 Line Item Nomenclature:  
XM107, CAL. 50 SNIPER RIFLE (G01500)

WBS Cost Elements: Fiscal Years	Contractor and Location	Contract Method and Type	Location of PCO	Award Date	Date of First Delivery	QTY Each	Unit Cost \$000	Specs Avail Now?	Date Revsn Avail	RFP Issue Date
Hardware										
FY01										
Weapon	Barrett Firearms Mfg., Christian, TN	C/FFP	ARDEC	Jan-01	Jul-01	230	8			Sep 97
Laser Protector & Anti-Reflection Device	TBS	C/FFP	ARDEC	Jun-01	Jul-01	230				Jul 00

**REMARKS:** Solicitation issued in Sep 97 included production options for FY01 and FY02.





**Exhibit P-40, Budget Item Justification Sheet**

Date:

February 2000

Appropriation / Budget Activity/Serial No:

PROCUREMENT OF WPNS & TRKD CMBT VEHS / 2 / Weapons and Other Combat Vehicles

P-1 Item Nomenclature:

5.56 CARBINE M4 (G14904)

Program Elements for Code B Items:

Code:

A

Other Related Program Elements:

	Prior Years	FY 1997	FY 1998	FY 1999	FY 2000	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	To Complete	Total Prog
Proc Qty	68698	10603	7484	6310	8687	8309					30218	140309
Gross Cost	38.0	6.5	4.2	4.2	5.3	5.2	0.0	0.0	0.0	0.0	21.2	84.5
Less PY Adv Proc												
Plus CY Adv Proc												
Net Proc (P-1)	38.0	6.5	4.2	4.2	5.3	5.2	0.0	0.0	0.0	0.0	21.2	84.5
Initial Spares												
Total Proc Cost	38.0	6.5	4.2	4.2	5.3	5.2	0.0	0.0	0.0	0.0	21.2	84.5
Flyaway U/C												
Wpn Sys Proc U/C												

**DESCRIPTION:** The M4 Carbine is a 5.56mm gas-operated, air-cooled, magazine-fed, selective-rate, shoulder-fired weapon. It is fed by a 30-round magazine and will replace all M3A1 WWII era .45 cal Submachine guns, and selective M16 series rifles and M9 pistols. It provides the individual soldier operating in close quarters the capability to engage targets at extended ranges with accurate lethal fire. Although more compact and featuring a collapsible stock, it achieves over 85% commonality with the M16A2 rifle.

**JUSTIFICATION:** The M4 Carbine will provide soldiers with a compact, light-weight weapon that can provide better self protection and additional firepower in close quarters. The FY01 program will allow for the uninterrupted fielding of the M4 Carbine to Army units. Procurement is necessary to achieve the Army Procurement Objective (APO) for the M4 Carbine.

<b>Exhibit P-5, Weapon WTCV Cost Analysis</b>		Appropriation/ Budget Activity/Serial No: PROCUREMENT OF WPNS & TRKD CMBT VEHS / 2 / Weapons and Other Combat			P-1 Line Item Nomenclature: 5.56 CARBINE M4 (G14904)			Weapon System Type:			Date: February 2000		
<b>Cost Elements</b>	ID CD	<b>FY 98</b>			<b>FY 99</b>			<b>FY 00</b>			<b>FY 01</b>		
		TotalCost \$000	Qty Each	UnitCost \$000	TotalCost \$000	Qty Each	UnitCost \$000	TotalCost \$000	Qty Each	UnitCost \$000	TotalCost \$000	Qty Each	UnitCost \$000
1. Hardware M4 Carbine w/Sling Magazine, Blank Firing Attachment, and Improved Buttstock	A				3288	6310	1	4552	8687	1	4354	8309	1
2. Engineering Support - In House Support					424			278			316		
3. Engineering Change Proposals (ECP's)					161			91			50		
4. Quality Assurance (ARDEC)								75			75		
5. Integrated Logistics Support (ILS)					75			75			75		
6. Fielding/Transportaion					246			215			320		
7. Engineering Study													
<b>TOTAL</b>					<b>4194</b>			<b>5286</b>			<b>5190</b>		

### Exhibit P-5a, Budget Procurement History and Planning

Date: February 2000

Appropriation / Budget Activity/Serial No: PROCUREMENT OF WPNS & TRKD CMBT VEHS / 2 / Weapons and Other Combat Vehicles		Weapon System Type:			P-1 Line Item Nomenclature: 5.56 CARBINE M4 (G14904)						
WBS Cost Elements: Fiscal Years	Contractor and Location	Contract Method and Type	Location of PCO	Award Date	Date of First Delivery	QTY Each	Unit Cost \$000	Specs Avail Now?	Date Revsn Avail	RFP Issue Date	
FY99	Colt's Mfg Co., Inc. Hartford, CT	SS/FFP M-4(3)	TACOM - Rock Island	Feb-99	Apr-00	3684	1	Yes	No		
	Colt's Mfg Co., Inc. Hartford, CT	SS/FFP M-4(4)	TACOM - Rock Island	Feb-99	Nov-00	2626	1	Yes	No		
FY00	Colt's Mfg Co., Inc. Hartford, CT	Option/ FY98 SS/FFP	TACOM - Rock Island	Jan-00	Jul-01	8687	1	Yes	No		
FY01	Colt's Mfg Co., Inc. Hartford, CT	Option/ FY98 SS/FFP	TACOM - Rock Island	Jan-01	Mar-02	8309	1	Yes	No		

REMARKS:







**Exhibit P-40, Budget Item Justification Sheet**

Date: February 2000

Appropriation / Budget Activity/Serial No: PROCUREMENT OF WPNS & TRKD CMBT VEHS / 2 / Weapons and Other Combat Vehicles  
 P-1 Item Nomenclature: MARK-19 MODIFICATIONS (GB3000)

Program Elements for Code B Items: Code: Other Related Program Elements:

	Prior Years	FY 1997	FY 1998	FY 1999	FY 2000	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	To Complete	Total Prog
Proc Qty												
Gross Cost	0.0	0.0	0.0	0.0	2.0	1.8	0.7	2.7	3.9	3.9	0.0	15.0
Less PY Adv Proc												
Plus CY Adv Proc												
Net Proc (P-1)	0.0	0.0	0.0	0.0	2.0	1.8	0.7	2.7	3.9	3.9	0.0	15.0
Initial Spares												
Total Proc Cost	0.0	0.0	0.0	0.0	2.0	1.8	0.7	2.7	3.9	3.9	0.0	15.0
Flyaway U/C												
Wpn Sys Proc U/C												

**DESCRIPTION:** The Adjustable Sight Bracket (ASB), when attached to the MK19 Grenade Machine Gun will provide a mounting interface for various night vision devices.

**JUSTIFICATION:** The ASB adjusts to allow the fire control to maintain a line of sight to target out to max range while the weapon is elevated to engage targets. The FY 00/01 procurement allows for the mounting of Night Vision Devices on the weapon. The bracket in conjunction with Night Vision devices will result in reduced target acquisition time.

**Exhibit P-40M Budget Item Justification Sheet**

Date  
February 2000

Appropriation / Budget Activity/Serial No.  
PROCUREMENT OF WPNS & TRKD CMBT VEHS / 2 / Weapons and Other Combat Vehicles

P-1 Item Nomenclature  
MARK-19 MODIFICATIONS (GB3000)

Program Elements for Code B Items

Code

Other Related Program Elements

Description		Fiscal Years									
OSIP NO.	Classification	FY 1998	FY 1999	FY 2000	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	TC	Total

Adjustable Sight Bracket											
TBD1	Operational	0.0	0.0	2.0	1.8	0.7	2.7	3.9	3.9	5.7	20.7
Totals		0.0	0.0	2.0	1.8	0.7	2.7	3.9	3.9	5.7	20.7

**INDIVIDUAL MODIFICATION**

Date February 2000

**MODIFICATION TITLE:** Adjustable Sight Bracket TBD1

**MODELS OF SYSTEMS AFFECTED:** MK19 Grenade Machine Gun

**DESCRIPTION / JUSTIFICATION:**

The Adjustable Sight Bracket (ASB), when attached to the MK19 Grenade Machine Gun will provide a mounting interface for various night vision devices. The ASB adjusts to allow the fire control to maintain a line of sight to target out to max range while the weapon is elevated to engage targets. The ASB in conjunction with Night Vision devices will result in reduced target acquisition time.

**DEVELOPMENT STATUS / MAJOR DEVELOPMENT MILESTONES:** PLANNED ACTUAL

Materiel Work Order	2Q00
Production Contract Award	4Q00
First Production Delivered	3Q01
First Unit Equipped	4Q01

**Installation Schedule:**

Pr Yr	FY 1999				FY 2000				FY 2001				FY 2002				FY 2003			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
<b>Totals</b>																				
<b>Inputs</b>																				
<b>Outputs</b>																				

  

	FY 2004				FY 2005				FY 2006				FY 2007				To Complete	Totals
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4		
<b>Inputs</b>																		
<b>Outputs</b>																		

**METHOD OF IMPLEMENTATION:** Field Application      **ADMINISTRATIVE LEADTIME:** 5 Months      **PRODUCTION LEADTIME:** 12 Months

**Contract Dates:** FY 1999      FY 2000 SEP 00      FY 2001 MAR 01

**Delivery Date:** FY 1999      FY 2000 JUN 01      FY 2001 FEB 02

INDIVIDUAL MODIFICATION

Date February 2000

MODIFICATION TITLE (Cont): Adjustable Sight Bracket TBD1

FINANCIAL PLAN: (\$ in Millions)

	FY 1998 and Prior		FY 1999		FY 2000		FY 2001		FY 2002		FY 2003		FY 2004		FY 2005		TC		TOTAL		
	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	
RDT&E	0.473																				0.473
PROCUREMENT																					
Quantity					1594		1601		457		2538		3650		3646		4514			18000	
Installation Kits																					
Installation Kits, Nonrecurring																					
Hardware					1.426		1.403		0.406		2.377		3.559		3.497		4.966			17.634	
Engineering Support					0.425		0.300		0.250		0.250		0.250		0.250		0.500			2.225	
Testing					0.010												0.025			0.035	
Integrated Logistical Support					0.060		0.060		0.060		0.060		0.060		0.060		0.120			0.480	
Fielding					0.050		0.050		0.025		0.050		0.050		0.050		0.100			0.375	
Installation of Hardware																					
FY 1998 & Prior Eqpt -- Kits																					
FY 1999 Eqpt -- Kits																					
FY 2000 Eqpt -- Kits							400		1194											1594	
FY 2001 Eqpt -- Kits									400		1201									1601	
FY 2002 Eqpt -- kits											457									457	
FY 2003 Eqpt -- kits											600		1938							2538	
FY 2004 Eqpt -- kits													733		2917					3650	
FY 2005 Eqpt -- kits															211		3435			3646	
TC Equip-Kits																	4514			4514	
Total Installment							400		1594		2258		2671		3128		7949			18000	
Total Procurement Cost					2.0		1.8		0.7		2.7		3.9		3.9		5.7			20.7	

**Exhibit P-40, Budget Item Justification Sheet**

Date: February 2000

Appropriation / Budget Activity/Serial No: PROCUREMENT OF WPNS & TRKD CMBT VEHS / 2 / Weapons and Other Combat Vehicles  
 P-1 Item Nomenclature: M4 CARBINE MODS (GB3007)

Program Elements for Code B Items: Code: Other Related Program Elements:

	Prior Years	FY 1997	FY 1998	FY 1999	FY 2000	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	To Complete	Total Prog
Proc Qty												
Gross Cost	0.9	4.8	7.4	6.7	5.3	2.5	0.0	0.0	0.0	0.0	0.0	27.6
Less PY Adv Proc												
Plus CY Adv Proc												
Net Proc (P-1)	0.9	4.8	7.4	6.7	5.3	2.5	0.0	0.0	0.0	0.0	0.0	27.6
Initial Spares												
Total Proc Cost	0.9	4.8	7.4	6.7	5.3	2.5	0.0	0.0	0.0	0.0	0.0	27.6
Flyaway U/C												
Wpn Sys Proc U/C												

**DESCRIPTION:** The M4 Carbine Modification Program provides a close combat optic, an improved buttstock, a modular weapon suite: which includes a rail system, a top carry sling and a permanently affixed back-up iron sight for the M4 Carbine. It also provides the capability for firing the M203A1 Grenade Launcher (GL) with the M4 Carbine.

**JUSTIFICATION:** The close combat optic allows the soldier to fire a weapon with both eyes open allowing greater awareness of events happening in close proximity and improves hit probability in daylight, low light level, wet weather and other adverse conditions. The modular weapon system is a key component of Land Warrior Lethality and allows the combat commander to custom configure weapons based upon the mission . The top sling maintains the Carbine in an upright position freeing the user's hands for other tasks. The permanent back-up, rear opertive, iron sight provides that capability in the event it becomes immediately necessary. The M203A1 Grenade Launcher insures compatability with the M4 Carbine.The improved buttstock provides the rifleman an ergonomically optimized buttstock for the M4 Carbine.

**Exhibit P-40M Budget Item Justification Sheet**

Date  
February 2000

Appropriation / Budget Activity/Serial No.      P-1 Item Nomenclature  
 PROCUREMENT OF WPNS & TRKD CMBT VEHS / 2 / Weapons and Other Combat Vehicles      M4 CARBINE MODS (GB3007)

Program Elements for Code B Items      Code      Other Related Program Elements

Description		Fiscal Years									
OSIP NO.	Classification	FY 1998	FY 1999	FY 2000	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	TC	Total
Modular Weapon System											
TBD1	Operational	5.8	3.9	0.0	2.5	0.0	0.0	0.0	0.0	0.0	12.2
Close Combat Optic											
TBD2	Operational	5.1	2.6	5.3	0.0	0.0	0.0	0.0	0.0	0.0	13.0
M203 for M4 Carbine											
TBD3	Operational	1.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.6
M4 Carbine Buttstock											
TBD4	Operational	0.6	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.8
Totals		13.1	6.7	5.3	2.5	0.0	0.0	0.0	0.0	0.0	27.7

**INDIVIDUAL MODIFICATION**

Date February 2000

**MODIFICATION TITLE:** Modular Weapon System TBD1

**MODELS OF SYSTEMS AFFECTED:** 5.56 Carbine M4

**DESCRIPTION / JUSTIFICATION:**

The modular weapon is a system of mounting rails/methods to allow the custom configuration of M4 Carbines with ancillary items such as optics, night sights, IR laser pointers, the grenade launcher, back-up sights, etc., based upon mission requirements.

DEVELOPMENT STATUS / MAJOR DEVELOPMENT MILESTONES:	PLANNED	ACTUAL
Developmental/Operational Tests		3Q95-2Q96
Milestone III Production Decision		4Q97
Production Contract Award		4Q97
First Production Hardware Delivered		4Q98
First Unit Equipped		2Q99

**Installation Schedule:**

Pr Yr	FY 1999				FY 2000				FY 2001				FY 2002				FY 2003					
	Totals	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	
<b>Inputs</b>																						
<b>Outputs</b>																						

  

	FY 2004				FY 2005				FY 2006				FY 2007				To Complete	Totals				
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4						
<b>Inputs</b>																						
<b>Outputs</b>																						

**METHOD OF IMPLEMENTATION:** Field Application      **ADMINISTRATIVE LEADTIME:** 6 Months      **PRODUCTION LEADTIME:** 12 Months

**Contract Dates:** FY 1999 Jul 99      FY 2000      FY 2001 Jan 01

**Delivery Date:** FY 1999 Jan 00      FY 2000      FY 2001 Dec 01

INDIVIDUAL MODIFICATION

Date

February 2000

MODIFICATION TITLE (Cont): Modular Weapon System TBD1

FINANCIAL PLAN: (\$ in Millions)

	FY 1998 and Prior		FY 1999		FY 2000		FY 2001		FY 2002		FY 2003		FY 2004		FY 2005		TC		TOTAL		
	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	
RDT&E		1.158																			1.158
PROCUREMENT																					
Quantity (Rail Systems)	15058		7788				5400														28246
Installation Kits																					
Installation Kits, Nonrecurring																					
Hardware		5.411		3.352				2.322													11.085
Equipment, Nonrecurring																					
Engineering Support		0.258		0.343				0.092													0.693
Testing		0.020																			0.020
Integrated Logistical Support		0.040		0.030				0.030													0.100
Fielding		0.117		0.124				0.060													0.301
Engineering Study				0.040																	0.040
Installation of Hardware																					
FY 1998 & Prior Eqpt -- Kits	2000		9500			3558															15058
FY 1999 Eqpt -- Kits						7788															7788
FY 2000 Eqpt -- Kits																					
FY 2001 Eqpt -- Kits									5400												5400
FY 2002 Eqpt -- kits																					
FY 2003 Eqpt -- kits																					
FY 2004 Eqpt -- kits																					
FY 2005 Eqpt -- kits																					
TC Equip-Kits																					
Total Installment	2000		9500		11346				5400												28246
Total Procurement Cost		5.8		3.9				2.5													12.2



INDIVIDUAL MODIFICATION

Date

February 2000

MODIFICATION TITLE (Cont): Close Combat Optic TBD2

FINANCIAL PLAN: (\$ in Millions)

	FY 1998 and Prior		FY 1999		FY 2000		FY 2001		FY 2002		FY 2003		FY 2004		FY 2005		TC		TOTAL		
	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	
RDT&E		1.469																			1.469
PROCUREMENT																					
Quantity	23300		11625		20320																55245
Installation Kits																					
Installation Kits, Nonrecurring																					
Hardware		4.504		2.423		4.977															11.904
Equipment, Nonrecurring																					
Engineering Support		0.363		0.163		0.225															0.751
Testing		0.150				0.050															0.200
Integrated Logistical Support		0.050				0.020															0.070
Fielding		0.050				0.020															0.070
Other																					
Interim Contractor Support																					
Installation of Hardware																					
FY 1998 & Prior Eqpt -- Kits	4399		18901																		23300
FY 1999 Eqpt -- Kits					11625																11625
FY 2000 Eqpt -- Kits					10659		9661														20320
FY 2001 Eqpt -- Kits																					
FY 2002 Eqpt -- kits																					
FY 2003 Eqpt -- kits																					
FY 2004 Eqpt -- kits																					
FY 2005 Eqpt -- kits																					
TC Equip-Kits																					
Total Installment	4399		18901		22284		9661														55245
Total Procurement Cost		5.1		2.6		5.3															13.0

**INDIVIDUAL MODIFICATION**

Date February 2000

**MODIFICATION TITLE:** M203 for M4 Carbine TBD3

**MODELS OF SYSTEMS AFFECTED:** M4 Carbine, M4A1

**DESCRIPTION / JUSTIFICATION:**

The Army units assigned the M4 Carbine will obtain the capability to fire the M203 Grenade Launcher (GL) with the M4 Carbine.

**DEVELOPMENT STATUS / MAJOR DEVELOPMENT MILESTONES:**

**PLANNED**

**ACTUAL**

Developmental/Operational Tests  
 Type Classification/Milestone III  
 Production Contract Award  
 First Production Hardware Delivered  
 First Unit Equipped

1Q97  
 4Q97  
 4Q97  
 3Q98  
 4Q98

**Installation Schedule:**

Pr Yr	FY 1999				FY 2000				FY 2001				FY 2002				FY 2003					
	Totals	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	
<b>Inputs</b>																						
<b>Outputs</b>																						

  

	FY 2004				FY 2005				FY 2006				FY 2007				To Complete	Totals				
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4						
<b>Inputs</b>																						
<b>Outputs</b>																						

**METHOD OF IMPLEMENTATION:** Field Application      **ADMINISTRATIVE LEADTIME:** Months      **PRODUCTION LEADTIME:** Months  
**Contract Dates:** FY 1999      FY 2000      FY 2001  
**Delivery Date:** FY 1999      FY 2000      FY 2001

INDIVIDUAL MODIFICATION

Date

February 2000

MODIFICATION TITLE (Cont): M203 for M4 Carbine TBD3

FINANCIAL PLAN: (\$ in Millions)

	FY 1998 and Prior		FY 1999		FY 2000		FY 2001		FY 2002		FY 2003		FY 2004		FY 2005		TC		TOTAL		
	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	
RDT&E		0.631																			0.631
PROCUREMENT																					
Quantity	5152																				5152
Installation Kits																					
Installation Kits, Nonrecurring																					
Hardware		1.148																			1.148
Equipment, Nonrecurring																					
Engineering Support		0.348																			0.348
Testing		0.012																			0.012
Integrated Logistical Support		0.040																			0.040
Fielding		0.030																			0.030
Other																					
Interim Contractor Support																					
Installation of Hardware																					
FY 1998 & Prior Eqpt -- Kits	2576		2576																		5152
FY 1999 Eqpt -- Kits																					
FY 2000 Eqpt -- Kits																					
FY 2001 Eqpt -- Kits																					
FY 2002 Eqpt -- kits																					
FY 2003 Eqpt -- kits																					
FY 2004 Eqpt -- kits																					
FY 2005 Eqpt -- kits																					
TC Equip-Kits																					
Total Installment	2576		2576																		5152
Total Procurement Cost		1.6																			1.6

**INDIVIDUAL MODIFICATION**

Date February 2000

**MODIFICATION TITLE:** M4 Carbine Buttstock TBD4

**MODELS OF SYSTEMS AFFECTED:** M4 Carbine

**DESCRIPTION / JUSTIFICATION:**

The M4 Improved Buttstock provides the rifleman with features for obtaining the proper shooting form; stock/shoulder weld and stock/cheek weld.

This program provides the rifleman with an ergonomically optimized buttstock for the M4 Carbine.

**DEVELOPMENT STATUS / MAJOR DEVELOPMENT MILESTONES:**

	PLANNED	ACCOMPLISHED
Finalize Design		1Q98
Contract Award (Limited Rate)		2Q98
First Production Hardware Delivered		3Q98
MWO/First Unit Equipped		1Q99

**Installation Schedule:**

Pr Yr	FY 1999				FY 2000				FY 2001				FY 2002				FY 2003			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
<b>Totals</b>																				
<b>Inputs</b>																				
<b>Outputs</b>																				

  

	FY 2004				FY 2005				FY 2006				FY 2007				To Complete	Totals
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4		
<b>Inputs</b>																		
<b>Outputs</b>																		

**METHOD OF IMPLEMENTATION:** Field Application      **ADMINISTRATIVE LEADTIME:** 1 Months      **PRODUCTION LEADTIME:** 3 Months

**Contract Dates:** FY 1999 Aug 99      FY 2000      FY 2001

**Delivery Date:** FY 1999 Oct 99      FY 2000      FY 2001

INDIVIDUAL MODIFICATION

Date

February 2000

MODIFICATION TITLE (Cont): M4 Carbine Buttstock TBD4

FINANCIAL PLAN: (\$ in Millions)

	FY 1998 and Prior		FY 1999		FY 2000		FY 2001		FY 2002		FY 2003		FY 2004		FY 2005		TC		TOTAL		
	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	
RDT&E																					
PROCUREMENT																					
Quantity	10300		30769																		41069
Installation Kits																					
Installation Kits, Nonrecurring																					
Hardware		0.519		0.142																	0.7
Equipment, Nonrecurring																					
Engineering Support		0.063		0.042																	0.1
Testing				0.057																	0.1
Integrated Logistical Support		0.020		0.005																	0.0
Fielding																					
Other																					
Interim Contractor Support																					
Installation of Hardware																					
FY 1998 & Prior Eqpt -- Kits			10300																		10300
FY 1999 Eqpt -- Kits					30769																30769
FY 2000 Eqpt -- Kits																					
FY 2001 Eqpt -- Kits																					
FY 2002 Eqpt -- kits																					
FY 2003 Eqpt -- kits																					
FY 2004 Eqpt -- kits																					
FY 2005 Eqpt -- kits																					
TC Equip-Kits																					
Total Installment			10300		30769																41069
Total Procurement Cost		0.6		0.2																	0.8

**Exhibit P-40, Budget Item Justification Sheet**

Date: February 2000

Appropriation / Budget Activity/Serial No: PROCUREMENT OF WPNS & TRKD CMBT VEHS / 2 / Weapons and Other Combat Vehicles  
 P-1 Item Nomenclature: SQUAD AUTOMATIC WEAPON (MOD) (GZ1290)

Program Elements for Code B Items: Code: Other Related Program Elements:

	Prior Years	FY 1997	FY 1998	FY 1999	FY 2000	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	To Complete	Total Prog
Proc Qty												
Gross Cost	6.0	0.0	0.0	0.0	8.3	10.0	5.4	4.1	4.8	0.0	0.0	38.6
Less PY Adv Proc												
Plus CY Adv Proc												
Net Proc (P-1)	6.0	0.0	0.0	0.0	8.3	10.0	5.4	4.1	4.8	0.0	0.0	38.6
Initial Spares												
Total Proc Cost	6.0	0.0	0.0	0.0	8.3	10.0	5.4	4.1	4.8	0.0	0.0	38.6
Flyaway U/C												
Wpn Sys Proc U/C												

**DESCRIPTION:**

The M249 Squad Automatic Weapon (SAW) is a 5.56mm, lightweight, machine gun that can be utilized in the automatic rifle role and the machine gun role. The M249 Feedtray Cover will provide a Military Standard 1913 rail interface allowing the mounting of standard military optics (M145 Machine Gun Optics, TWS, PVS-4, etc.) directly to the machine gun. The front rails will be fastened to the sides and bottom of the M249 SAW receiver. The side rails accommodate the devices when the weapon is used in either role, while the bottom rail provides an attachment for the vertical handgrip when the SAW is used in the automatic rifle role. The M249 Machine Gun Short Barrel will provide a short version of the 5.56mm automatic weapon.

**JUSTIFICATION:**

The rails will allow for the attachment of a large variety of existing and future high technology electronic and night vision devices, vertical handgrip and horizontal handgrip, which will provide the soldier additional capabilities to engage targets at extended ranges and during periods of limited visibility. The short barrel, when used in conjunction with the M5 Collapsible Buttstock, shortens the M249 Machine Gun by more than 10 inches enhancing the operational capability by improving MOUT maneuverability and Airborne/Air Assault jump capabilities.

**Exhibit P-40M Budget Item Justification Sheet**

Date  
February 2000

Appropriation / Budget Activity/Serial No.      P-1 Item Nomenclature  
 PROCUREMENT OF WPNS & TRKD CMBT VEHS / 2 / Weapons and Other Combat Vehicles      SQUAD AUTOMATIC WEAPON (MOD) (GZ1290)

Program Elements for Code B Items      Code      Other Related Program Elements

Description		Fiscal Years									
OSIP NO.	Classification	FY 1998	FY 1999	FY 2000	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	TC	Total
M249 Feedtray Covers											
TBD1	Operational	0.0	0.0	5.3	8.5	0.0	0.0	0.0	0.0	0.0	13.7
M249 Rails/Bipod/Handguard											
TBD2	Operational	0.0	0.0	0.0	0.5	5.4	4.1	4.8	0.0	0.0	14.9
M249 Short Barrel											
TBD3	Operational	0.0	0.0	3.0	1.0	0.0	0.0	0.0	0.0	0.0	4.0
Totals		0.0	0.0	8.3	10.0	5.4	4.1	4.8	0.0	0.0	32.6

\* The Prior Year Total on the P40 includes \$6.M of programs no longer on this line.

**INDIVIDUAL MODIFICATION**

Date February 2000

**MODIFICATION TITLE:** M249 Feedtray Covers TBD1

**MODELS OF SYSTEMS AFFECTED:** M249 Squad Automatic Weapon & Machine Gun

**DESCRIPTION / JUSTIFICATION:**

The M249 Feedtray Cover will provide a Military Standard 1913 rail interface. The rail will allow mounting standard military optics (M145 Machine Gun Optics, TWS, PVS-4 etc), directly to the machine gun. The rail is required to ensure that advanced optical sights can be mounted on the M249 providing the soldier additional capabilities to engage targets at extended ranges and during periods of limited visibility.

**DEVELOPMENT STATUS / MAJOR DEVELOPMENT MILESTONES:**

**PLANNED**

**ACTUAL**

Developmental/User Test

3Q98

Production Decision

4Q98

Production Contract Award

2Q00

First Production Hardware Delivered

3Q00

First Unit Equipped

4Q00

**Installation Schedule:**

Pr Yr	FY 1999				FY 2000				FY 2001				FY 2002				FY 2003			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
<b>Totals</b>																				
<b>Inputs</b>																				
<b>Outputs</b>																				

  

	FY 2004				FY 2005				FY 2006				FY 2007				To Complete	Totals
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4		
<b>Inputs</b>																		
<b>Outputs</b>																		

**METHOD OF IMPLEMENTATION:**

**ADMINISTRATIVE LEADTIME:**

5 Months

**PRODUCTION LEADTIME:**

5 Months

Contract Dates:

FY 1999

Enter Date

FY 2000

Feb 00

FY 2001

Feb 01

Delivery Date:

FY 1999

Enter Date

FY 2000

Jun 00

FY 2001

Jun 01

INDIVIDUAL MODIFICATION

Date February 2000

MODIFICATION TITLE (Cont): M249 Feedtray Covers TBD1

FINANCIAL PLAN: (\$ in Millions)

	FY 1998 and Prior		FY 1999		FY 2000		FY 2001		FY 2002		FY 2003		FY 2004		FY 2005		TC		TOTAL		
	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	
RDT&E	0.602																				0.6
PROCUREMENT																					
Quantity					22336		36570														58906
Installation Kits																					
Installation Kits, Nonrecurring																					
Hardware						4.932		8.046													13.0
Engineering Support						0.232		0.285													0.5
Testing						0.050		0.050													0.1
Integrated Logistical Support						0.050		0.050													0.1
Fielding						0.025		0.025													0.1
Other																					
Interim Contractor Support																					
Installation of Hardware																					
FY 1998 & Prior Eqpt -- Kits																					
FY 1999 Eqpt -- Kits																					
FY 2000 Eqpt -- Kits					7445		14891														22336
FY 2001 Eqpt -- Kits							12190		24380												36570
FY 2002 Eqpt -- kits																					
FY 2003 Eqpt -- kits																					
FY 2004 Eqpt -- kits																					
FY 2005 Eqpt -- kits																					
TC Equip-Kits																					
Total Installment						7445		27081		24380											58906
Total Procurement Cost							5.3		8.5												13.7

**INDIVIDUAL MODIFICATION**

Date February 2000

**MODIFICATION TITLE:** M249 Rails/Bipod/Handguard TBD2

**MODELS OF SYSTEMS AFFECTED:** M249 Squad Automatic Weapon & Machine Gun

**DESCRIPTION / JUSTIFICATION:**

The M249 Squad Automatic Weapon (SAW) is a 5.56mm, lightweight, machine gun that will be utilized in the automatic rifle role and the machine gun role. The front rails will be fastened to the sides and bottom of the M249 SAW receiver. They will allow the attachment of a large variety of existing and future high technology electronic and night vision devices, vertical handgrip and horizontal handgrip.

The front side rails accommodate the devices when the weapon is used in either role. When the SAW is used in the automatic rifle role, the bottom rail provides an attachment point for the vertical handgrip.

**DEVELOPMENT STATUS / MAJOR DEVELOPMENT MILESTONES:** **PLANNED**

Developmental/Operational Test	2Q01
Production Decision	3Q01
Production Contract Award	4Q01
First Production Hardware Delivered	2Q02
First Unit Equipped	4Q02

**Installation Schedule:**

Pr Yr	FY 1999				FY 2000				FY 2001				FY 2002				FY 2003			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
<b>Totals</b>																				
<b>Inputs</b>																				
<b>Outputs</b>																				

  

	FY 2004				FY 2005				FY 2006				FY 2007				To Complete	Totals
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4		
<b>Inputs</b>																		
<b>Outputs</b>																		

**METHOD OF IMPLEMENTATION:** ADMINISTRATIVE LEADTIME: 10 Months PRODUCTION LEADTIME: 7 Months

Contract Dates:	FY 1999	Enter Date	FY 2000	Enter Date	FY 2001	AUG 01
Delivery Date:	FY 1999	Enter Date	FY 2000	Enter Date	FY 2001	MAR 02

INDIVIDUAL MODIFICATION

Date February 2000

MODIFICATION TITLE (Cont): M249 Rails/Bipod/Handguard TBD2

FINANCIAL PLAN: (\$ in Millions)

	FY 1998 and Prior		FY 1999		FY 2000		FY 2001		FY 2002		FY 2003		FY 2004		FY 2005		TC		TOTAL		
	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	
RDT&E						0.509				0.577											1.616
PROCUREMENT																					
Quantity								520		5582		4244		5000							15346
Installation Kits																					
Installation Kits, Nonrecurring																					
Hardware									0.350	3.400		2.500		3.000							9.250
Equipment, Nonrecurring																					
Engineering Support								0.150		0.272		0.211		0.202							0.835
Testing										0.300		0.120		0.150							0.570
Integrated Logistical Support										0.080		0.100		0.100							0.280
Fielding										1.370		1.179		1.382							3.931
Installation of Hardware																					
FY 1998 & Prior Eqpt -- Kits																					
FY 1999 Eqpt -- Kits																					
FY 2000 Eqpt -- Kits																					
FY 2001 Eqpt -- Kits									520												520
FY 2002 Eqpt -- kits											2796		2786								5582
FY 2003 Eqpt -- kits												2124		2120							4244
FY 2004 Eqpt -- kits														2502				2498			5000
FY 2005 Eqpt -- kits																					
TC Equip-Kits																					
Total Installment										520		2796		4910		4622		2498			15346
Total Procurement Cost								0.5		5.4		4.1		4.8							14.9

**INDIVIDUAL MODIFICATION**

Date February 2000

**MODIFICATION TITLE:** M249 Short Barrel TBD3

**MODELS OF SYSTEMS AFFECTED:** IM249 Squad Automatic Weapon & Machine Gun

**DESCRIPTION / JUSTIFICATION:**

The M249 Machine Gun Short Barrel will provide a short version of the 5.56mm automatic weapon. The Short Barrel, when used in conjunction with the M5 Collapsible Buttstock, shortens the M249MG by more than 10 inches. The resultant short weapon enhances operational capability by improving MOUT maneuverability and Airborne/Air Assault jump capabilities.

DEVELOPMENT STATUS / MAJOR DEVELOPMENT MILESTONES:	PLANNED	ACTUAL
Developmental/User Test		1Q00
Production Decision	2Q00	
Production Contract Award	3Q00	
First Production Hardware Delivered	1Q01	
First Unit Equipped	2Q01	

**Installation Schedule:**

Pr Yr	FY 1999				FY 2000				FY 2001				FY 2002				FY 2003			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
<b>Totals</b>																				
<b>Inputs</b>																				
<b>Outputs</b>																				

  

	FY 2004				FY 2005				FY 2006				FY 2007				To Complete	Totals
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4		
<b>Inputs</b>																		
<b>Outputs</b>																		

**METHOD OF IMPLEMENTATION:** ADMINISTRATIVE LEADTIME: 5 Months PRODUCTION LEADTIME: 6 Months

Contract Dates: FY 1999 Enter Date FY 2000 May 00 FY 2001 May 01

Delivery Date: FY 1999 Enter Date FY 2000 Nov 00 FY 2001 Nov 01

INDIVIDUAL MODIFICATION

Date

February 2000

MODIFICATION TITLE (Cont): M249 Short Barrel TBD3

FINANCIAL PLAN: (\$ in Millions)

	FY 1998 and Prior		FY 1999		FY 2000		FY 2001		FY 2002		FY 2003		FY 2004		FY 2005		TC		TOTAL		
	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	
RDT&E																					
PROCUREMENT																					
Kit Quantity					4536		1184													5720	
Installation Kits																					
Installation Kits, Nonrecurring																					
Hardware						2.395		0.625													3.0
Engineering Support						0.400		0.250													0.7
Testing						0.100		0.050													0.2
Integrated Logistical Support						0.075		0.050													0.1
Fielding						0.030		0.025													0.1
Support Equipment																					
Other																					
Interim Contractor Support																					
Installation of Hardware																					
FY 1998 & Prior Eqpt -- Kits																					
FY 1999 Eqpt -- Kits																					
FY 2000 Eqpt -- Kits							4536													4536	
FY 2001 Eqpt -- Kits									1184											1184	
FY 2002 Eqpt -- kits																					
FY 2003 Eqpt -- kits																					
FY 2004 Eqpt -- kits																					
FY 2005 Eqpt -- kits																					
TC Equip-Kits																					
Total Installment							4536		1184												5720
Total Procurement Cost							3.0		1.0												4.0

**Exhibit P-40, Budget Item Justification Sheet**

Date: February 2000

Appropriation / Budget Activity/Serial No: PROCUREMENT OF WPNS & TRKD CMBT VEHS / 2 / Weapons and Other Combat Vehicles  
 P-1 Item Nomenclature: MEDIUM MACHINE GUNS (MODS) (GZ1300)

Program Elements for Code B Items: Code: Other Related Program Elements:

	Prior Years	FY 1997	FY 1998	FY 1999	FY 2000	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	To Complete	Total Prog
Proc Qty												
Gross Cost	6.3	1.9	0.0	0.0	0.0	0.5	0.7	0.0	3.0	3.0	0.0	15.4
Less PY Adv Proc												
Plus CY Adv Proc												
Net Proc (P-1)	6.3	1.9	0.0	0.0	0.0	0.5	0.7	0.0	3.0	3.0		15.4
Initial Spares												
Total Proc Cost	6.3	1.9	0.0	0.0	0.0	0.5	0.7	0.0	3.0	3.0	0.0	15.4
Flyaway U/C												
Wpn Sys Proc U/C												

**DESCRIPTION:** The M240B Machine Gun is a ground version of the M240 Machine Gun, the 7.62mm Medium Machine Gun class weapon designed as a coaxial/pintle-mounted weapon for tanks and light armored vehicles. The M240B is an air cooled, link-belt fed, gas operated weapon. The weapon features fixed head space, which permits rapid change of the barrels. The principle difference between the M240 and the M240B is the addition of a flash suppressor, front sight, carrying handle for the barrel, buttstock, pistol grip, bipod, heatshield and rear sight assembly. The M240B Machine Gun may also be tripod-mounted and used in conjunction with a traversing and elevating mechanism and a flex mount pintle. Since the initial fielding of the M240B, various system enhancements have been identified that further improves the use of this weapon system by reducing weight, increasing functionality, and improving training capability.

**JUSTIFICATION:** The M240B Medium Machine Gun is an infantry version of the M240 Armored Machine Gun intended to replace the M60 Series Machine Gun in light infantry, mechanized infantry, and combat engineer units. The US Army has identified a need to upgrade its current inventory of 7.62mm Medium Machine Guns in order to provide the dismounted infantryman a more reliable, accurate, and lethal medium machine gun to suppress and destroy enemy personnel, lightly armored vehicles and fortified positions. The system enhancements have been identified by fielded units as those which are desired to further improve this remarkably reliable weapon system.

**Exhibit P-40M Budget Item Justification Sheet**

Date  
February 2000

Appropriation / Budget Activity/Serial No.      P-1 Item Nomenclature  
 PROCUREMENT OF WPNS & TRKD CMBT VEHS / 2 / Weapons and Other Combat Vehicles      MEDIUM MACHINE GUNS (MODS) (GZ1300)

Program Elements for Code B Items      Code      Other Related Program Elements

Description		Fiscal Years									
OSIP NO.	Classification	FY 1998	FY 1999	FY 2000	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	TC	Total
M240B System Improvements											
TBD1		0.0	0.0	0.0	0.5	0.7	0.0	0.0	0.0	0.0	1.2
Improved Tripod											
TBD2		0.0	0.0	0.0	0.0	0.0	0.0	3.0	3.0	4.5	10.5
Totals											
		0.0	0.0	0.0	0.5	0.7	0.0	3.0	3.0	4.5	11.7

\* The Prior Year Total on the P40 includes \$8.2M of programs no longer on this line.

**INDIVIDUAL MODIFICATION**

Date February 2000

**MODIFICATION TITLE:** M240B System Improvements TBD1

**MODELS OF SYSTEMS AFFECTED:** ARMOR MACHINE GUN, 7.62MM M240 SERIES (G13000)

**DESCRIPTION / JUSTIFICATION:**

The M240B system improvements decrease the system weight and improve the weapon system functionality. Providing capability to carry and attach weapon system accessories, provide for adjustable bipod, improved ergonomics of buttstock and improvements in the heatshield design attains increased functionality. Reducing weight in various weapon and tripod components attains the reduction in weight.

**DEVELOPMENT STATUS / MAJOR DEVELOPMENT MILESTONES:**

	<b>Planned</b>	<b>ACTUAL</b>
Development/Operational Tests	Mar 00	
Production Decision	OCT 01	
Production Contract Award	Jun 01	
First Production Hardware Delivered	Dec 01	
First Unit Equipped	Mar 02	

**Installation Schedule:**

Pr Yr	FY 1999				FY 2000				FY 2001				FY 2002				FY 2003			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
<b>Totals</b>																				
<b>Inputs</b>																				
<b>Outputs</b>																				

  

	FY 2004				FY 2005				FY 2006				FY 2007				To Complete	Totals
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4		
<b>Inputs</b>																		
<b>Outputs</b>																		

**METHOD OF IMPLEMENTATION:**

**ADMINISTRATIVE LEADTIME:**

8 Months

**PRODUCTION LEADTIME:**

6 Months

Contract Dates: FY 1999

FY 2000

FY 2001 JUN 01

Delivery Date: FY 1999

FY 2000

FY 2001 DEC 01

INDIVIDUAL MODIFICATION

Date February 2000

MODIFICATION TITLE (Cont): M240B System Improvements TBD1

FINANCIAL PLAN: (\$ in Millions)

	FY 1998 and Prior		FY 1999		FY 2000		FY 2001		FY 2002		FY 2003		FY 2004		FY 2005		TC		TOTAL		
	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	
RDT&E																					
PROCUREMENT																					
Kit Quantity							3300		5000											8300	
Installation Kits																					
Installation Kits, Nonrecurring																					
Hardware								0.276	0.417											0.693	
Equipment, Nonrecurring																					
Engineering Support							0.050		0.075											0.125	
Testing																					
Integrated Logistical Support							0.037		0.050											0.087	
Fielding							0.132		0.200											0.332	
Support Equipment																					
Other																					
Interim Contractor Support																					
Installation of Hardware																					
FY 1998 & Prior Eqpt -- Kits																					
FY 1999 Eqpt -- Kits																					
FY 2000 Eqpt -- Kits																					
FY 2001 Eqpt -- Kits									2400		900									3300	
FY 2002 Eqpt -- kits											2700		2300							5000	
FY 2003 Eqpt -- kits																					
FY 2004 Eqpt -- kits																					
FY 2005 Eqpt -- kits																					
TC Equip-Kits																					
Total Installment									2400		3600		2300							8300	
Total Procurement Cost								0.5	0.7												1.2

**INDIVIDUAL MODIFICATION**

Date February 2000

**MODIFICATION TITLE:** Improved Tripod TBD2

**MODELS OF SYSTEMS AFFECTED:** ARMOR MACHINE GUN, 7.62MM M240 SERIES (G13000)

**DESCRIPTION / JUSTIFICATION:**

The Light Weight Tripod will reduce the weight by approximately 50 percent of the current tripod. It will incorporate a modern traverse and elevating mechanism that will maintain predetermined elevation throughout the full range of weapon traverse, as well as have a series of index marks that enable gunners to construct a range data card.

**DEVELOPMENT STATUS / MAJOR DEVELOPMENT MILESTONES:**

	<b>Planned</b>	<b>ACTUAL</b>
Development/Operational Tests	3Q03	
Type Classification (LRP)	4Q03	
Production Contract Award	2Q04	
First Production Hardware Delivered	4Q04	
First Unit Equipped	1Q05	

**Installation Schedule:**

Pr Yr	FY 1999				FY 2000				FY 2001				FY 2002				FY 2003			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
<b>Totals</b>																				
<b>Inputs</b>																				
<b>Outputs</b>																				

  

	FY 2004				FY 2005				FY 2006				FY 2007				To Complete	Totals
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4		
<b>Inputs</b>																		
<b>Outputs</b>																		

**METHOD OF IMPLEMENTATION:**

**ADMINISTRATIVE LEADTIME:**

9 Months

**PRODUCTION LEADTIME:**

9 Months

Contract Dates: FY 1999

FY 2000

FY 2001

Delivery Date: FY 1999

FY 2000

FY 2001

INDIVIDUAL MODIFICATION

Date February 2000

MODIFICATION TITLE (Cont): Improved Tripod TBD2

FINANCIAL PLAN: (\$ in Millions)

	FY 1998 and Prior		FY 1999		FY 2000		FY 2001		FY 2002		FY 2003		FY 2004		FY 2005		TC		TOTAL		
	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	
RDT&E																					
PROCUREMENT																					
Kit Quantity													3000		3000		4804			10804	
Installation Kits																					
Installation Kits, Nonrecurring																					
Hardware													2.208		2.205		3.330			7.743	
Equipment, Nonrecurring																					
Engineering Support													0.387		0.385		0.585			1.357	
Testing																					
Integrated Logistical Support													0.100		0.100		0.135			0.335	
Fielding													0.300		0.300		0.450			1.050	
Support Equipment																					
Other																					
Interim Contractor Support																					
Installation of Hardware																					
FY 1998 & Prior Eqpt -- Kits																					
FY 1999 Eqpt -- Kits																					
FY 2000 Eqpt -- Kits																					
FY 2001 Eqpt -- Kits																					
FY 2002 Eqpt -- kits																					
FY 2003 Eqpt -- kits																					
FY 2004 Eqpt -- kits															3000					3000	
FY 2005 Eqpt -- kits																	3000			3000	
TC Equip-Kits																	4804			4804	
Total Installment															3000		7804			10804	
Total Procurement Cost													3.0		3.0		4.5			10.5	

**Exhibit P-40, Budget Item Justification Sheet**

Date: February 2000

Appropriation / Budget Activity/Serial No: PROCUREMENT OF WPNS & TRKD CMBT VEHS / 2 / Weapons and Other Combat Vehicles  
 P-1 Item Nomenclature: HOWITZER, TOWED, 155MM, M198 (MODS) (GA0430)

Program Elements for Code B Items: Code: Other Related Program Elements:

	Prior Years	FY 1997	FY 1998	FY 1999	FY 2000	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	To Complete	Total Prog
Proc Qty												
Gross Cost	0.0	0.0	0.0	0.0	3.3	3.5	2.8	0.0	0.0	0.0	0.0	9.6
Less PY Adv Proc												
Plus CY Adv Proc												
Net Proc (P-1)	0.0	0.0	0.0	0.0	3.3	3.5	2.8				0.0	9.6
Initial Spares												
Total Proc Cost	0.0	0.0	0.0	0.0	3.3	3.5	2.8	0.0	0.0	0.0	0.0	9.6
Flyaway U/C												
Wpn Sys Proc U/C												

**DESCRIPTION:** Howitzer Improvement Program and Enhancement (HIPE) for the 155MM, M198, Medium Towed Howitzer

**JUSTIFICATION:** FY01 funding is required to meet two of the major thrusts for ForceXXI and for Army After Next (AAN) to modernize and digitize current weapon systems. The M198 Howitzer must be modernized in order to perform it's mission of general support for the light division. The modifications applied with this funding fulfill this requirement. The HIPE will greatly enhance the mobility, survivability, and responsiveness of the M198. These modifications will ensure that the M198 will continue to be a force multiplier today and in the future.

**Exhibit P-40M Budget Item Justification Sheet**

Date  
February 2000

Appropriation / Budget Activity/Serial No.      P-1 Item Nomenclature  
 PROCUREMENT OF WPNS & TRKD CMBT VEHS / 2 / Weapons and Other Combat Vehicles      HOWITZER, TOWED, 155MM, M198 (MODS) (GA0430)

Program Elements for Code B Items      Code      Other Related Program Elements

Description		Fiscal Years									
OSIP NO.	Classification	FY 1998	FY 1999	FY 2000	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	TC	Total
TBD1											
Block1 Upgrade	Operational	0.0	0.0	3.3	3.5	2.8	0.0	0.0	0.0	0.0	9.6
Totals		0.0	0.0	3.3	3.5	2.8	0.0	0.0	0.0	0.0	9.6

**INDIVIDUAL MODIFICATION**

Date February 2000

**MODIFICATION TITLE:** M198 HIPE

**MODELS OF SYSTEMS AFFECTED:** M198,155MM Towed Howitzer

**DESCRIPTION / JUSTIFICATION:**

This block will add: (1) Hydraulic Power Assist Kit (Hypak) which will significantly reduce soldier workload and response time;  
(2) pre-modification depot maintenance.

**DEVELOPMENT STATUS / MAJOR DEVELOPMENT MILESTONES:**

	Planned	Accomplished		Planned	Accomplished
Materiel Change Initiated		2Q98	First Kit Applied	1Q01	
Testing Initiated	2Q99		Last Kit Applied	4Q02	
Testing Completed	4Q99				
Production Contract Awarded	2Q00				
First Production Hardware Delivered	1Q01				

**Installation Schedule:**

Pr Yr	FY 1999				FY 2000				FY 2001				FY 2002				FY 2003			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
<b>Inputs</b>									150				150							
<b>Outputs</b>									38	38	37	37	38	38	37	37				

  

	FY 2004				FY 2005				FY 2006				FY 2007				To Complete	Totals
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4		
<b>Inputs</b>																		300
<b>Outputs</b>																		300

**METHOD OF IMPLEMENTATION:** Contractor ADMINISTRATIVE LEADTIME: 4 Months PRODUCTION LEADTIME: 8 Months

Contract Dates: FY 1999 FY 2000 Jan 00 FY 2001 Jan 01

Delivery Date: FY 1999 FY 2000 Nov 00 FY 2001 Nov 01

INDIVIDUAL MODIFICATION

Date February 2000

MODIFICATION TITLE (Cont): Block 1 Upgrade

FINANCIAL PLAN: (\$ in Millions)

	FY 1998 and Prior		FY 1999		FY 2000		FY 2001		FY 2002		FY 2003		FY 2004		FY 2005		TC		TOTAL		
	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	
RDT&E																					
PROCUREMENT																					
Kit Quantity					150	0.705	150	0.705											300	1.410	
Installation Kits						0.190															0.190
Installation Kits, Nonrecurring Equipment						0.100															0.100
Equipment, Nonrecurring																					
Engineering Change Orders						0.400															0.400
Data						0.300															0.300
Training Equipment																					
Support Equipment																					
Pre-Modification Depot Maint						1.635		1.616		1.620											4.871
Interim Contractor Support																					
Pre-Modification Depot Maint																					
Installation of Hardware																					
FY 1998 & Prior Eqpt -- Kits																					
FY 1999 Eqpt -- Kits																					
FY 2000 Eqpt -- Kits							150	1.186											150	1.186	
FY 2001 Eqpt -- Kits									150	1.186									150	1.186	
FY 2002 Eqpt -- kits																					
FY 2003 Eqpt -- kits																					
FY 2004 Eqpt -- kits																					
FY 2005 Eqpt -- kits																					
TC Equip-Kits																					
Total Installment							150	1.186	150	1.186										300	2.372
Total Procurement Cost						3.330		3.507		2.806											9.643

**Exhibit P-40, Budget Item Justification Sheet**

Date: February 2000

Appropriation / Budget Activity/Serial No: PROCUREMENT OF WPNS & TRKD CMBT VEHS / 2 / Weapons and Other Combat Vehicles  
 P-1 Item Nomenclature: M119 MODIFICATIONS (GC0401)

Program Elements for Code B Items: Code: Other Related Program Elements:

	Prior Years	FY 1997	FY 1998	FY 1999	FY 2000	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	To Complete	Total Prog
Proc Qty												
Gross Cost	0.0	0.0	4.8	4.8	4.8	4.7	4.9	4.8	0.0	0.0	0.0	28.7
Less PY Adv Proc												
Plus CY Adv Proc												
Net Proc (P-1)	0.0	0.0	4.8	4.8	4.8	4.7	4.9	4.8	0.0	0.0	0.0	28.7
Initial Spares												
Total Proc Cost	0.0	0.0	4.8	4.8	4.8	4.7	4.9	4.8	0.0	0.0	0.0	28.7
Flyaway U/C												
Wpn Sys Proc U/C												

**DESCRIPTION:** Light Artillery System Improvement Plan (LASIP) for the 105mm, M119A1 Light, Towed Howitzer

**JUSTIFICATION:** The 105mm M119A1 Light, Towed Howitzer was selected as the weapon of choice for the light forces because it was a nondevelopmental item (NDI) with growth potential. Now that 418 M119A1 howitzers have been fielded, it is time to realize that growth potential. The Light Artillery System Improvement Plan (LASIP) initiates this process by correcting known deficiencies, improving reliability, availability and maintainability (RAM), and providing solutions to requests for minor operational enhancements. The LASIP was developed by the M119A1 Howitzer Improvement Team (HIT), chartered specifically to respond to improvements requested by field artillery units, the U.S. Army Field Artillery School (USAFAS) and the U.S. Army Training and Doctrine Command (TRADOC).

**Exhibit P-40M Budget Item Justification Sheet**

Date  
February 2000

Appropriation / Budget Activity/Serial No.      P-1 Item Nomenclature  
 PROCUREMENT OF WPNS & TRKD CMBT VEHS / 2 / Weapons and Other Combat Vehicles      M119 MODIFICATIONS (GC0401)

Program Elements for Code B Items      Code      Other Related Program Elements

Description		Fiscal Years									
OSIP NO.	Classification	FY 1998	FY 1999	FY 2000	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	TC	Total
TBD1											
Block1 Upgrade	Operational	4.8	4.2	2.3	0.0	0.0	0.0	0.0	0.0	0.0	11.2
TBD2											
Block2 Upgrade	Operational	0.0	0.6	2.5	4.7	4.9	4.8	0.0	0.0	0.0	17.5
Totals		4.8	4.8	4.8	4.7	4.9	4.8	0.0	0.0	0.0	28.7

**INDIVIDUAL MODIFICATION**

Date February 2000

**MODIFICATION TITLE:** TBD1 Block1 Upgrade

**MODELS OF SYSTEMS AFFECTED:** Howitzer, Light Towed, 105mm M119A1

**DESCRIPTION / JUSTIFICATION:**

Retrofit Low Temp Recuperator 1-90-05-7875: the seals function only to temperature of -25F not the -50F. Improve Indirect Fire control; Upgrade M187 1-94-05-7911; The M119A1 indirect fire control system fails approximately 14 times more often than other hardware fire control systems when Operational Mode Profile (OMP) is factored in. Upgrade Cam Follower Arm: preventing damage to the cam follower will improve reliability, availability and maintainability while reducing Operating and Support costs (OSCR). Improve Firing Stays: the design and mounting clearances for the clevis pins on the rear firing stays of the firing platform make it very difficult to attach the stays to the trail during emplacement. Improve Traveling Stays: the design and mounting clearances for the clevis pins on the traveling stays make it very difficult to attach the stays to the trail when preparing for towing. Modify Brake System: the new modified brake system is of commercial design which provides better brakes and has lower spares costs. Add Trail Lifting Handles: due to limited clearance, the user has requested trail lifting handles be designed.

**DEVELOPMENT STATUS / MAJOR DEVELOPMENT MILESTONES:**

	Planned	Accomplished		Planned	Accomplished
Validate Materiel change (MC)		3Q90	Deliver First Mod Kit		1Q99
Critical Design Review		3Q91	First Unit Equipped (FUE)		1Q99
Complete Testing of Prototype		3Q92	Deliver Last Mod Kit	4Q00	
Release Technical Data Package (TDP)		1Q93	Last Unit Equipped	4Q00	
Award Contract for Modification Kits		2Q98			

**Installation Schedule:**

Pr Yr	FY 1999				FY 2000				FY 2001				FY 2002				FY 2003			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
<b>Inputs</b>	46	76	63	38	46	58	43	36												
<b>Outputs</b>	46	76	63	38	46	58	43	36												

	FY 2004				FY 2005				FY 2006				FY 2007				To Complete	Totals
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4		
<b>Inputs</b>																		406
<b>Outputs</b>																		406

**METHOD OF IMPLEMENTATION:** Unit Application ADMINISTRATIVE LEADTIME: 4 Months PRODUCTION LEADTIME: 6 Months  
 Contract Dates: FY 1999 Multiple FY 2000 Multiple FY 2001 Multiple  
 Delivery Date: FY 1999 Multiple FY 2000 Multiple FY 2001 Multiple

INDIVIDUAL MODIFICATION

Date

February 2000

MODIFICATION TITLE (Cont): TBD1 Block1 Upgrade

FINANCIAL PLAN: (\$ in Millions)

	FY 1998 and Prior		FY 1999		FY 2000		FY 2001		FY 2002		FY 2003		FY 2004		FY 2005		TC		TOTAL		
	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	
RDT&E																					
PROCUREMENT																					
Kit Quantity	110		125		171															406	
Installation Kits																					
Installation Kits, Nonrecurring																					
Equipment		4.337		3.666		1.656															9.659
Equipment, Nonrecurring		0.026																			0.026
Engineering Change Orders		0.032		0.025		0.025															0.082
Data		0.162		0.225		0.235															0.622
Training Equipment																					
Support Equipment																					
Other		0.167																			0.167
Contractor Support				0.051		0.080															0.131
Installation of Hardware																					
FY 1998 & Prior Eqpt -- Kits	38	0.040	72	0.080																110	0.120
FY 1999 Eqpt -- Kits			113	0.125	12	0.020														125	0.145
FY 2000 Eqpt -- Kits					171	0.247														171	0.247
FY 2001 Eqpt -- Kits																					
FY 2002 Eqpt -- kits																					
FY 2003 Eqpt -- kits																					
FY 2004 Eqpt -- kits																					
FY 2005 Eqpt -- kits																					
TC Equip-Kits																					
Total Installment	38	0.040	185	0.205	183	0.267														406	0.512
Total Procurement Cost		4.764		4.172		2.263															11.199

**INDIVIDUAL MODIFICATION**

Date February 2000

**MODIFICATION TITLE:** TBD2 Block2 Upgrade

**MODELS OF SYSTEMS AFFECTED:** Howitzer, Light Towed, 105mm M119A1

**DESCRIPTION / JUSTIFICATION:**

The rammer/extractor tool currently issued was "borrowed" from the M102 Howitzer which requires the base of the primed cartridge be forcefully struck by a hard rubber plunger. Upgrade elevating handwheel: it is the limiting factor in the system departure angle during cross country movement and is highly susceptible to damage during tactical operations. Modify the Firing Platform clamps: the firing platform must be disengaged from its stowage brackets, lifted manually from the trail, carried completely clear of the trail and placed on the ground before the howitzer can be rolled into its firing position. Modify the Elevation Clutches: this will reduce corrosion damage and lower maintenance costs. Replace compensating tubes in the buffer assembly with a more reliable system. This eliminates the collapse of the current tube design. Modification of firing platform to allow overhaul rather than replacement. Howitzer locator to allow weapon to be easily located during night air drop operations. Add a pressure gage to the recuperator.

**DEVELOPMENT STATUS / MAJOR DEVELOPMENT MILESTONES:**

	Planned	Accomplished		Planned	Accomplished
Validate Materiel change (MC)		3Q94	Deliver First Mod Kit	3Q02	
Critical Design Review	3Q00		First Unit Equipped (FUE)	4Q02	
Complete Testing of Prototype	4Q00		Deliver Last Mod Kit	4Q03	
Release Technical Data Package (TDP)	1Q01		Last Unit Equipped	1Q04	
Award Contract for Modification Kits	2Q01				

**Installation Schedule:**

Pr Yr	FY 1999				FY 2000				FY 2001				FY 2002				FY 2003				
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	
<b>Inputs</b>															50	80	80	80	80	80	
<b>Outputs</b>															50	80	80	80	80	80	
Inputs	FY 2004				FY 2005				FY 2006				FY 2007				To Complete	Totals			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4					
<b>Inputs</b>																					406
<b>Outputs</b>	36																				406

**METHOD OF IMPLEMENTATION:** Unit Application ADMINISTRATIVE LEADTIME: 3 Months PRODUCTION LEADTIME: 13 Months  
 Contract Dates: FY 1999 FY 2000 FY 2001  
 Delivery Date: FY 1999 FY 2000 FY 2001

INDIVIDUAL MODIFICATION

Date February 2000

MODIFICATION TITLE (Cont): TBD2 Block2 Upgrade

FINANCIAL PLAN: (\$ in Millions)

	FY 1998 and Prior		FY 1999		FY 2000		FY 2001		FY 2002		FY 2003		FY 2004		FY 2005		TC		TOTAL		
	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	
RDT&E																					
PROCUREMENT							140		155		111									406	
Kit Quantity																					
Installation Kits																					
Installation Kits, Nonrecurring																					
Equipment								4.284	4.311		3.390									11.985	
Equipment, Nonrecurring						0.340															0.340
Engineering Change Orders			0.600		0.742		0.082		0.065		0.085										1.574
Data																					
Training Equipment																					
Support Equipment						0.126															0.126
Other						1.270		0.305	0.328		0.342										2.245
Contractor Support						0.022		0.034	0.025		0.030										0.111
Installation of Hardware																					
FY 1998 & Prior Eqpt -- Kits																					
FY 1999 Eqpt -- Kits																					
FY 2000 Eqpt -- Kits																					
FY 2001 Eqpt -- Kits									50	0.128	90	0.265								140	0.393
FY 2002 Eqpt -- kits											155	0.411								155	0.411
FY 2003 Eqpt -- kits											111	0.319								111	0.319
FY 2004 Eqpt -- kits																					
FY 2005 Eqpt -- kits																					
TC Equip-Kits																					
Total Installment									50	0.128	356	0.995								406	1.123
Total Procurement Cost			0.600		2.500		4.705		4.857		4.842										17.504

**Exhibit P-40, Budget Item Justification Sheet**

Date:

February 2000

Appropriation / Budget Activity/Serial No:

PROCUREMENT OF WPNS & TRKD CMBT VEHS / 2 / Weapons and Other Combat Vehicles

P-1 Item Nomenclature:

M16 RIFLE MODS (GZ2800)

Program Elements for Code B Items:

Code:

Other Related Program Elements:

	Prior Years	FY 1997	FY 1998	FY 1999	FY 2000	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	To Complete	Total Prog
Proc Qty												
Gross Cost	33.6	4.9	4.5	5.2	7.1	9.6	2.1	0.0	2.4	2.4	0.0	71.9
Less PY Adv Proc												
Plus CY Adv Proc												
Net Proc (P-1)	33.6	4.9	4.5	5.2	7.1	9.6	2.1	0.0	2.4	2.4	0.0	71.9
Initial Spares												
Total Proc Cost	33.6	4.9	4.5	5.2	7.1	9.6	2.1	0.0	2.4	2.4	0.0	71.9
Flyaway U/C												
Wpn Sys Proc U/C												

**DESCRIPTION:** The M16 family of rifles is a gas operated, magazine fed and shoulder fired weapon. They are fed by 30 round magazines. The M16 Rifle Modifications Program provides a close combat optic, a modular weapon system suite: which includes a rail system, a top carry sling and a permanently affixed, rear aperture, back-up iron sight for the M16A4 Rifle. The modular weapon allows the custom configuration of the M16 rifles with accessories and smaller items. i.e. optics, night sights, laser pointers, based on mission requirements.

**JUSTIFICATION:** The close combat optic allows the soldier to fire a weapon with both eyes open allowing greater awareness of events happening in close proximity and improves hit probability in daylight, low light level, wet weather and other adverse conditions. The modular weapon system is a key component of Land Warrior Lethality and allows the combat commander to custom configure weapons with accessories (i.e. day/night sights, laser pointers, ancillary weapons, etc.) based upon the mission. The top carry sling maintains the rifle in an upright position freeing the user's hands for other tasks. The permanent back-up, rear aperture, iron sight provides that capability in the event it becomes immediately necessary.

**Exhibit P-40M Budget Item Justification Sheet**

Date  
February 2000

Appropriation / Budget Activity/Serial No.      P-1 Item Nomenclature  
 PROCUREMENT OF WPNS & TRKD CMBT VEHS / 2 / Weapons and Other Combat Vehicles      M16 RIFLE MODS (GZ2800)

Program Elements for Code B Items      Code      Other Related Program Elements

Description		Fiscal Years									
OSIP NO.	Classification	FY 1998	FY 1999	FY 2000	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	TC	Total
Modular Weapon System M16/M203											
TBD1	Operational	4.3	3.5	7.2	9.6	2.1	0.0	2.4	2.4	0.0	31.5
Close Combat Optic M16											
TBD2	Operational	7.9	1.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	9.6
Totals		12.2	5.2	7.2	9.6	2.1	0.0	2.4	2.4	0.0	41.1

\* The Prior Year Total on the P-40 includes \$30.9 of programs no longer on this line plus \$12.2M of programs presently being executed, while the FY 1998 Total on the P40M (\$12.2M) only addresses the later.

**INDIVIDUAL MODIFICATION**

Date February 2000

**MODIFICATION TITLE:** Modular Weapon System M16/M203 TBD1

**MODELS OF SYSTEMS AFFECTED:** Rifle, 5.56mm M16A2

**DESCRIPTION / JUSTIFICATION:**

The modular weapon is a system of mounting rails/methods that allows the custom configuration of M16 Rifles with accessories and ancillary items such as optics, night sights, IR aiming light, the grenade launcher, back-up sights, etc., based upon mission requirements in the field, without tools.

**DEVELOPMENT STATUS / MAJOR DEVELOPMENT MILESTONES:**

**PLANNED**

**ACTUAL**

Developmental/Operational Tests  
 Milestone III Production Decision  
 Production Contract Award  
 First Production Hardware Delivered  
 First Unit Equipped

3Q95-2Q96  
 3Q97  
 4Q97  
 4Q98  
 2Q99

**Installation Schedule:**

Pr Yr	FY 1999				FY 2000				FY 2001				FY 2002				FY 2003					
	Totals	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	
<b>Inputs</b>																						
<b>Outputs</b>																						

  

	FY 2004				FY 2005				FY 2006				FY 2007				To Complete	Totals				
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4						
<b>Inputs</b>																						
<b>Outputs</b>																						

**METHOD OF IMPLEMENTATION:** Field Application      **ADMINISTRATIVE LEADTIME:** 6 Months      **PRODUCTION LEADTIME:** 12 Months  
 Contract Dates:      FY 1999      Jul 99      FY 2000      Jan 00      FY 2001      Jan 01  
 Delivery Date:      FY 1999      Jan 00      FY 2000      Dec 00      FY 2001      Dec 01

INDIVIDUAL MODIFICATION

Date February 2000

MODIFICATION TITLE (Cont): Modular Weapon System M16/M203 TBD1

FINANCIAL PLAN: (\$ in Millions)

	FY 1998 and Prior		FY 1999		FY 2000		FY 2001		FY 2002		FY 2003		FY 2004		FY 2005		TC		TOTAL		
	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	
RDT&E		1.158																			1.158
PROCUREMENT																					
Quantity (Rail Systems)	4903		6000		12000		17800		1200				4910		4910						51723
Installation Kits																					
Installation Kits, Nonrecurring																					
Hardware		3.676		3.179		6.832		9.230		1.850				2.200		2.200					29.167
Equipment, Nonrecurring																					
Engineering Support		0.402		0.247		0.150		0.150		0.137				0.117		0.111					1.314
Testing		0.055																			0.055
Integrated Logistical Support		0.065		0.025		0.025		0.060		0.050				0.050		0.050					0.325
Fielding		0.078		0.057		0.173		0.152		0.050				0.050		0.050					0.610
Other																					
Interim Contractor Support																					
Installation of Hardware																					
FY 1998 & Prior Eqpt -- Kits	2000		2500		403																4903
FY 1999 Eqpt -- Kits					6000																6000
FY 2000 Eqpt -- Kits							10000		2000												12000
FY 2001 Eqpt -- Kits									15000		2800										17800
FY 2002 Eqpt -- kits										1200											1200
FY 2003 Eqpt -- kits																					
FY 2004 Eqpt -- kits															4910						4910
FY 2005 Eqpt -- kits																	4910				4910
TC Equip-Kits																					
Total Installment	2000		2500		6403		10000		17000		4000				4910		4910				51723
Total Procurement Cost		4.3		3.5		7.2		9.6		2.1				2.4		2.4					31.5

**INDIVIDUAL MODIFICATION**

Date February 2000

**MODIFICATION TITLE:** Close Combat Optic M16 TBD2

**MODELS OF SYSTEMS AFFECTED:** M16A2/A4 Rifle, M68 Sight Reflex

**DESCRIPTION / JUSTIFICATION:**

The M68 Sight will be installed on the M16A2/A4 Rifle

The Close Combat Optic allows the soldier to fire his weapon with both eyes open allowing greater awareness of events happening in close proximity to the soldier and improves hit probability in daylight, low light level, wet weather and other adverse conditions.

**DEVELOPMENT STATUS / MAJOR DEVELOPMENT MILESTONES:**

**PLANNED**

**ACTUAL**

Development/Operational Test

1/2Q96

Type Classification (LRIP)

4Q96

Production Contract Award

4Q96

First Production Hardware Delivered

1Q97

First Unit Equipped

2Q98

**Installation Schedule:**

Pr Yr	FY 1999				FY 2000				FY 2001				FY 2002				FY 2003					
	Totals	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	
<b>Inputs</b>																						
<b>Outputs</b>																						

  

	FY 2004				FY 2005				FY 2006				FY 2007				To Complete	Totals				
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4						
<b>Inputs</b>																						
<b>Outputs</b>																						

**METHOD OF IMPLEMENTATION:** Field Application ADMINISTRATIVE LEADTIME: 1 Months PRODUCTION LEADTIME: 10 Months

Contract Dates: FY 1999 Jan 99 FY 2000 FY 2001

Delivery Date: FY 1999 Oct 99 FY 2000 FY 2001

INDIVIDUAL MODIFICATION

Date February 2000

MODIFICATION TITLE (Cont): Close Combat Optic M16 TBD2

FINANCIAL PLAN: (\$ in Millions)

	FY 1998 and Prior		FY 1999		FY 2000		FY 2001		FY 2002		FY 2003		FY 2004		FY 2005		TC		TOTAL		
	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	
RDT&E		1.470																			1.470
PROCUREMENT																					
Quantity	36161		7105																		43266
Installation Kits																					
Installation Kits, Nonrecurring																					
Hardware		6.993		1.454																	8.447
ECP		0.026																			0.026
Engineering Support		0.721		0.215																	0.936
Testing		0.062																			0.062
Integrated Logistical Support		0.070		0.010																	0.080
Fielding		0.070		0.010																	0.080
Other																					
Interim Contractor Support																					
Installation of Hardware																					
FY 1998 & Prior Eqpt -- Kits	12601		16949		6611																36161
FY 1999 Eqpt -- Kits					7105																7105
FY 2000 Eqpt -- Kits																					
FY 2001 Eqpt -- Kits																					
FY 2002 Eqpt -- kits																					
FY 2003 Eqpt -- kits																					
FY 2004 Eqpt -- kits																					
FY 2005 Eqpt -- kits																					
TC Equip-Kits																					
Total Installment	12601		16949		13716																43266
Total Procurement Cost		7.9		1.7																	9.6

**Exhibit P-40, Budget Item Justification Sheet**

Date: February 2000

Appropriation / Budget Activity/Serial No: PROCUREMENT OF WPNS & TRKD CMBT VEHS / 2 / Weapons and Other Combat Vehicles  
 P-1 Item Nomenclature: MODIFICATIONS LESS THAN \$5.0M (WOCV-WTCV (GC0925))

Program Elements for Code B Items: Code: Other Related Program Elements:

	Prior Years	FY 1997	FY 1998	FY 1999	FY 2000	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	To Complete	Total Prog
Proc Qty												
Gross Cost	72.8	0.6	1.3	1.1	1.0	0.8	1.3	0.8	1.3	1.3	0.0	82.4
Less PY Adv Proc												
Plus CY Adv Proc												
Net Proc (P-1)	72.8	0.6	1.3	1.1	1.0	0.8	1.3	0.8	1.3	1.3	0.0	82.4
Initial Spares												
Total Proc Cost	72.8	0.6	1.3	1.1	1.0	0.8	1.3	0.8	1.3	1.3	0.0	82.4
Flyaway U/C												
Wpn Sys Proc U/C												

**DESCRIPTION:** Provides for modification of Weapons and Other Combat Vehicles with a cost less than \$5.0 Million.

**JUSTIFICATION:** Funds identified in FY00/FY01 will provide M145 Machine Gun Optic Sights for the M249, M60 and M240B Machine Guns. The optic sight will allow the soldier to identify and engage targets more effectively than the existing iron sighting system. The optic sight also provides the soldier with a greater hit probability.

**Exhibit P-40M Budget Item Justification Sheet**

Date  
February 2000

Appropriation / Budget Activity/Serial No.      P-1 Item Nomenclature  
 PROCUREMENT OF WPNS & TRKD CMBT VEHS / 2 / Weapons and Other Combat Vehicles      MODIFICATIONS LESS THAN \$5.0M (WOCV-WTCV) (GC0925)

Program Elements for Code B Items      Code      Other Related Program Elements

Description		Fiscal Years									
OSIP NO.	Classification	FY 1998	FY 1999	FY 2000	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	TC	Total
M145 Machine Gun Optic											
TBD1	Operational	1.3	1.1	1.0	0.8	1.3	0.8	1.3	1.3	0.0	9.0
Totals		1.3	1.1	1.0	0.8	1.3	0.8	1.3	1.3	0.0	9.0

\* The Prior Year Total on the P-40 includes \$ 73.5M of programs no longer on this line.

**INDIVIDUAL MODIFICATION**

Date February 2000

**MODIFICATION TITLE:** Machine Gun Optics TBD1

**MODELS OF SYSTEMS AFFECTED:** M249 Squad Automatic Weapon; M60 Machine Guns, M240B Machine Guns

**DESCRIPTION / JUSTIFICATION:**

The M145 Machine Gun Optic Program provides a 3.4x, laser hardened telescopic sight for the 5.56mm M249 Light Machine Gun, the M60 and 7.62mm M240B Medium Machine Guns. The optic sight will allow the soldier to identify and engage targets at longer ranges and at lower light levels more effectively than the existing iron sighting system. The optic sight also provides the soldier with a greater hit probability.

DEVELOPMENT STATUS / MAJOR DEVELOPMENT MILESTONE	PLANNED	ACTUAL
Development/Operational Tests		3Q98
Type Classification (LRP)		4Q98
Production Contract Award		4Q98
First Production Hardware Delivered		4Q99
Type Classification (Standard)		1Q00
First Unit Equipped	2Q00	

**Installation Schedule:**

Pr Yr	FY 1999				FY 2000				FY 2001				FY 2002				FY 2003			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
<b>Totals</b>																				
<b>Inputs</b>																				
<b>Outputs</b>																				

  

	FY 2004				FY 2005				FY 2006				FY 2007				To Complete	Totals
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4		
<b>Inputs</b>																		
<b>Outputs</b>																		

**METHOD OF IMPLEMENTATION:** Unit Application ADMINISTRATIVE LEADTIME: 3 Months PRODUCTION LEADTIME: 2 Months

Contract Dates: FY 1999 Sep 99 FY 2000 Jan 00 FY 2001 Jan 01

Delivery Date: FY 1999 Jan 00 FY 2000 Mar 00 FY 2001 Mar 01

INDIVIDUAL MODIFICATION

Date

February 2000

MODIFICATION TITLE (Cont): Machine Gun Optics TBD1

FINANCIAL PLAN: (\$ in Millions)

	FY 1998 and Prior		FY 1999		FY 2000		FY 2001		FY 2002		FY 2003		FY 2004		FY 2005		TC		TOTAL		
	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	
RDT&E		2.127																			2.127
PROCUREMENT																					
Quantity	1901		658		1436		1133		2029		1254		2182		2182						12775
Installation Kits																					
Installation Kits, Nonrecurring																					
Hardware		1.177	0.354		0.773		0.610		1.091		0.674		1.200		1.198						7.077
Equipment, Nonrecurring																					
Engineering Support		0.106	0.455		0.139		0.137		0.122		0.133		0.079		0.078						1.249
Testing		0.034	0.270		0.050																0.354
Integrated Logistical Support		0.020	0.019		0.020		0.020		0.020		0.020		0.020		0.020						0.159
Fielding		0.010	0.020		0.020		0.020		0.020		0.020		0.020		0.020						0.150
Other																					
Interim Contractor Support																					
Installation of Hardware																					
FY 1998 & Prior Eqpt -- Kits					1901																1901
FY 1999 Eqpt -- Kits					658																658
FY 2000 Eqpt -- Kits					862		574														1436
FY 2001 Eqpt -- Kits							680		453												1133
FY 2002 Eqpt -- kits									1217		812										2029
FY 2003 Eqpt -- kits											752		502								1254
FY 2004 Eqpt -- kits													1309		873						2182
FY 2005 Eqpt -- kits															1309		873				2182
TC Equip-Kits																					
Total Installment					3421		1254		1670		1564		1811		2182		873				12775
Total Procurement Cost		1.3		1.1		1.0		0.8		1.3		0.8		1.3		1.3					9.0

**Exhibit P-40, Budget Item Justification Sheet**

Date: February 2000

Appropriation / Budget Activity/Serial No: PROCUREMENT OF WPNS & TRKD CMBT VEHS / 2 / Weapons and Other Combat Vehicles  
 P-1 Item Nomenclature: ITEMS LESS THAN \$5.0M (WOCV-WTCV) (GL3200)

Program Elements for Code B Items: Code: Other Related Program Elements:

	Prior Years	FY 1997	FY 1998	FY 1999	FY 2000	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	To Complete	Total Prog
Proc Qty												
Gross Cost	64.3	0.9	1.3	1.2	1.2	1.2	1.3	1.3	1.3	1.3	0.0	75.3
Less PY Adv Proc												
Plus CY Adv Proc												
Net Proc (P-1)	64.3	0.9	1.3	1.2	1.2	1.2	1.3	1.3	1.3	1.3	0.0	75.3
Initial Spares												
Total Proc Cost	64.3	0.9	1.3	1.2	1.2	1.2	1.3	1.3	1.3	1.3	0.0	75.3
Flyaway U/C												
Wpn Sys Proc U/C												

**DESCRIPTION:** Provides for procurement and assembly of tool/shop sets, small arms, and gun mounts. The items are needed by maintenance personnel to maintain weapons and combat vehicles, and by Active Army, National Guard, Reserve and ROTC units to perform combat and training missions. The tool/shop equipment has multi-applications and is essential to all levels of weapon and combat vehicle maintenance.

**JUSTIFICATION:** Required to achieve and sustain required levels of readiness to units providing maintenance support to all small arms (M16,9mm Pistol, 7.62 Machine Gun, etc.), artillery (M102,M119,M198 Howitzers, etc.), air defense (Vulcan, PIVAD, etc.) special weapons, and fire control (Tanks, etc.) organizations. Small Arms weapons are required to support AAO shortages, field replacements and training requirements.

<b>Exhibit P-5, Weapon WTCV Cost Analysis</b>		Appropriation/ Budget Activity/Serial No: PROCUREMENT OF WPNS & TRKD CMBT VEHS / 2 / Weapons and Other Combat			P-1 Line Item Nomenclature: ITEMS LESS THAN \$5.0M (WOCV-WTCV) (GL3200)			Weapon System Type:			Date: February 2000			
<b>Cost Elements</b>		ID CD	<b>FY 98</b>			<b>FY 99</b>			<b>FY 00</b>			<b>FY 01</b>		
			TotalCost \$000	Qty Each	UnitCost \$000	TotalCost \$000	Qty Each	UnitCost \$000	TotalCost \$000	Qty Each	UnitCost \$000	TotalCost \$000	Qty Each	UnitCost \$000
1. Shot Gun, 12 Guage	G124	A				104	400	0.260	100	400	0.250			
2. Shop Equip, Small Arms Repair, Shelter Mtd 4940-00-209-6236	G337	A				80	2	40						
3. Tool Set, Instrument and Fire Control FM 4931-00-754-0740	G371	A							56	2	28	56	2	28
4. Shop Set, Small Arms, Field Maint, PCS Set D 4933-00-348-7396	G385	A				184	2	92				150	2	75
5. Shop Set, Small Arms FM Basic 4933-00-754-0664	G723	A							19	1	19	38	2	19
6. Tool Set Battalion Maint 4940-01-140-2364	G427	A				501	63	8	532	66	8	456	57	8
7. Tool Kit, Electronic Sys Maint 5180-01-168-0487	S380	A				302	28	11	465	78	6	457	76	6
8. Shop Set, Small Arms, FM Basic 4933-00-754-0664		A				25	1	25						
9. Engineering Support for GL3200 budget line									29	1	29	25	1	25
<b>TOTAL</b>						1196			1201			1182		

**Exhibit P-40, Budget Item Justification Sheet**

Date: February 2000

Appropriation / Budget Activity/Serial No: PROCUREMENT OF WPNS & TRKD CMBT VEHS / 2 / Weapons and Other Combat Vehicles  
 P-1 Item Nomenclature: PRODUCTION BASE SUPPORT (WOCV-WTCV) (GC0050)

Program Elements for Code B Items: Code: Other Related Program Elements:

	Prior Years	FY 1997	FY 1998	FY 1999	FY 2000	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	To Complete	Total Prog
Proc Qty												
Gross Cost	739.7	4.9	6.1	5.1	4.5	5.2	5.4	4.8	5.5	5.7	0.0	786.9
Less PY Adv Proc												
Plus CY Adv Proc												
Net Proc (P-1)	739.7	4.9	6.1	5.1	4.5	5.2	5.4	4.8	5.5	5.7	0.0	786.9
Initial Spares												
Total Proc Cost	739.7	4.9	6.1	5.1	4.5	5.2	5.4	4.8	5.5	5.7	0.0	786.9
Flyaway U/C												
Wpn Sys Proc U/C												

Description: This program provides for Provision of Industrial Facilities (PIF). Funds are used to establish modernize, expand and replace facilities owned by the Army and provide Production Support and Equipment Replacement (PSR) and Modernization (MOD) to Government owned equipment used in production, production testing of Weapons and Tracked Combat Vehicles. Also provides funding for the Layaway of Industrial Facilities (LIF) for preservation of equipment and portions of plants which are no longer required for active production.

Justification: The FY01 request includes essential funding for replacement of equipment & instrumentation in production test facilities at Aberdeen, Yuma Proving Grounds, and White Sands Missile Range (WSMR) and layaway and excess individual items of Industrial Plant Equipment which is excess to production requirements at Rock Island and Watervliet Arsenals. Funds will also be used to provide preservation for Government-owned equipment and real property facilities to allow subsequent cost-effective Operation and Maintenance, Army storage.

<b>Exhibit P-5, Weapon WTCV Cost Analysis</b>		Appropriation/ Budget Activity/Serial No: PROCUREMENT OF WPNS & TRKD CMBT VEHS / 2 / Weapons and Other Combat			P-1 Line Item Nomenclature: PRODUCTION BASE SUPPORT (WOCV- WTCV) (GC0050)			Weapon System Type:			Date: February 2000		
<b>Cost Elements</b>	ID CD	<b>FY 98</b>			<b>FY 99</b>			<b>FY 00</b>			<b>FY 01</b>		
		TotalCost	Qty	UnitCost	TotalCost	Qty	UnitCost	TotalCost	Qty	UnitCost	TotalCost	Qty	UnitCost
		\$000	Each	\$000	\$000	Each	\$000	\$000	Each	\$000	\$000	Each	\$000
Provides funds to replace, modernize and upgrade equipment and instrumentation used in production testing of Wpns & Trkd Cmbt Vehs. Upgrading will be performed on automotive performance test equipment, vehicle dynamics, high speed imaging, interior exterior ballistics support inst, and toxic fumes instrumentation at Abderreen Test Center, White Sands Missile Range, and Yuma Proving Ground.					3451			2894			3482		
69X7667 LIF, Rock Isl & Watervliet Arsenal Provides funds for Layaway and Redistribution of Government-Owned equipment and preservation of equipment to include portions of plants which are no longer required for active production, but must be retained for future use. Also provides for plant clearance/preparation of equipment to be excessed.					1689			1652			1670		
<b>TOTAL</b>					<b>5140</b>			<b>4546</b>			<b>5152</b>		

**Exhibit P-40, Budget Item Justification Sheet**

Date: February 2000

Appropriation / Budget Activity/Serial No: PROCUREMENT OF WPNS & TRKD CMBT VEHS / 2 / Weapons and Other Combat Vehicles  
 P-1 Item Nomenclature: INDUSTRIAL PREPAREDNESS (GC0075)

Program Elements for Code B Items: Code: Other Related Program Elements:

	Prior Years	FY 1997	FY 1998	FY 1999	FY 2000	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	To Complete	Total Prog
Proc Qty												
Gross Cost	49.1	4.8	2.9	3.0	3.1	3.6	4.2	3.2	2.7	2.7	0.0	79.4
Less PY Adv Proc												
Plus CY Adv Proc												
Net Proc (P-1)	49.1	4.8	2.9	3.0	3.1	3.6	4.2	3.2	2.7	2.7	0.0	79.4
Initial Spares												
Total Proc Cost	49.1	4.8	2.9	3.0	3.1	3.6	4.2	3.2	2.7	2.7	0.0	79.4
Flyaway U/C												
Wpn Sys Proc U/C												

**DESCRIPTION:** This program provides funding to retain, protect, and maintain laidaway reserve industrial plants and equipment. Costs include grounds, utilities, fire and guard protection. Also includes funding for condition assessments of laidaway facilities and costs to rehabilitate equipment to useable condition.

**JUSTIFICATION:** The FY01 request supports the equipment and facilities at Rock Island Arsenal, Watervliet Arsenal, and Hawthorne Army Depot. It includes the overhead costs attributed to the laidaway portions of the Arsenal. Funds will also be used for the storage and maintenance costs of equipment which has been laidaway for future production.

**Exhibit P-40, Budget Item Justification Sheet**

Date: February 2000

Appropriation / Budget Activity/Serial No: PROCUREMENT OF WPNS & TRKD CMBT VEHS / 2 / Weapons and Other Combat Vehicles  
 P-1 Item Nomenclature: SMALL ARMS (SOLDIER ENH PROG) (GC0076)

Program Elements for Code B Items: Code: Other Related Program Elements:

	Prior Years	FY 1997	FY 1998	FY 1999	FY 2000	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	To Complete	Total Prog
Proc Qty												
Gross Cost	2.4	5.2	4.5	2.4	5.1	3.5	0.3	2.0	2.4	1.9	0.0	29.7
Less PY Adv Proc												
Plus CY Adv Proc												
Net Proc (P-1)	2.4	5.2	4.5	2.4	5.1	3.5	0.3	2.0	2.4	1.9	0.0	29.7
Initial Spares												
Total Proc Cost	2.4	5.2	4.5	2.4	5.1	3.5	0.3	2.0	2.4	1.9	0.0	29.7
Flyaway U/C												
Wpn Sys Proc U/C												

**DESCRIPTION:** This program provides small arms equipment for the soldier. Funding identified in FY00/FY01 will provide the soldiers with the following; a Dual Mount that can be used in both the vehicular (Armament HMMWV) and ground mount application for the MK19 Grenade Machine Gun (GMG) and M2 Heavy Barrel MG; an M197 HMMWV Mount (consisting of a pintle adapter, pintle, and travel lock) which provides the capability to mount either the 7.62mm M240B or the 5.56mm M249MG on the existing weapon station of the Armament HMMWV; an M203 Enhanced Fire Control Device which provides a reliable, man-portable interface/platform capable of allowing the soldier to utilize the weapon system to achieve significantly increased first round probability of hit on point and area targets at the maximum effective range of the system; a Sniper Accessory Kit that will contain a hand held wind meter, a low profile bipod, a polarized filter for a day scope, a compact cleaning kit and an adjustable cheek piece to steady the soldiers aim (all are available as non-developmental items); the Fire Support Team Vehicle (FISTV) and the Improved TOW Vehicle (ITV) are currently equipped with a weapon mount which accepts the M60 MG (which is being replaced by the M249 MG which does not fit into the existing FISTV/ITV weapon mount). The M249 Mounting Kit for the FISTV/ITV will provide an expedient method to convert the existing weapon mount to accept the M249 MG.

**JUSTIFICATION:** The Dual Mount will be fielded to scout platoons enabling them to install or switch weapons quickly in the event one vehicle goes down. Quantities have been increased to allow fielding to Infantry Anti-Armor and Military Police units. The system corrects the shortcomings of the current MK64 system allowing for bold and accurate traverse and elevation, further range (elevation) for the MK19, recoil attenuation of the M2 MG and capability for range card preparation. The M197 HMMWV Mount allows quick mounting of either the M240B or the M249 MG without tools and permits improved operator control of the weapon in both traverse and elevation. The M203 Fire Control Device will make the M203 weapon system quicker and more accurate to use, save ammunition and subject the user to less counterfire. The Soldier Enhancement program (SEP) was established by Congress to provide essential equipment for the individual soldier such as the Sniper Accessory Kit. Tasks under SEP are accomplished in an expedited manner. The M249 Mounting Kit for the FISTV/ITV enables the existing weapon mount to readily accept the M249MG to replace the M60 MG.

<b>Exhibit P-5, Weapon WTCV Cost Analysis</b>		Appropriation/ Budget Activity/Serial No: PROCUREMENT OF WPNS & TRKD CMBT VEHS / 2 / Weapons and Other Combat			P-1 Line Item Nomenclature: SMALL ARMS (SOLDIER ENH PROG) (GC0076)			Weapon System Type:			Date: February 2000		
<b>Cost Elements</b>	ID CD	<b>FY 98</b>			<b>FY 99</b>			<b>FY 00</b>			<b>FY 01</b>		
		TotalCost \$000	Qty Each	UnitCost \$000	TotalCost \$000	Qty Each	UnitCost \$000	TotalCost \$000	Qty Each	UnitCost \$000	TotalCost \$000	Qty Each	UnitCost \$000
1. Hardware													
MK93 MOD 1 Dual Mount	A				15	19	1	127	163	1			
HMMWV Mount M998 (Quantity)	A				202	180	1	754	500	2			
HMMWV Mount M1025/1026 (Quantity)	A				1170	3130		1275	2230	1			
Dismount Kits	A												
M203/M4 Fire Control											2343	2343	1
Sniper Accessory Kit											531	1062	1
FISTV / ITV Mount								830	2000				
2. ESIP													
Dual Mount					60			473					
HMMWV M249 Mount					125			275					
M203/M4 Fire Control											125		
Sniper Accessory Kit											175		
FISTV / ITV Mount								175					
3. Testing													
M203/M4 Fire Control													
FISTV / ITV Mount								205					
4. Integrated Logistics Support													
Dual Mount					40			150					
HMMWV M249 Mount					150			150					
M203/M4 Fire Control											25		
Sniper Accessory Kit											90		
FISTV / ITV Mount								40					
5. Fielding													
Dual Mount								150					
HMMWV M249 Mount					121			225					
M203/M4 Fire Control											15		
Sniper Accessory Kit											54		
FISTV / ITV Mount								30					
6. PM-SA Support (Previously funded under OMA)					482			274			148		
<b>TOTAL</b>					<b>2365</b>			<b>5133</b>			<b>3506</b>		

### Exhibit P-5a, Budget Procurement History and Planning

Date:  
February 2000

Appropriation / Budget Activity/Serial No: PROCUREMENT OF WPNS & TRKD CMBT VEHS / 2 / Weapons and Other Combat Vehicles		Weapon System Type:			P-1 Line Item Nomenclature: SMALL ARMS (SOLDIER ENH PROG) (GC0076)					
WBS Cost Elements: Fiscal Years	Contractor and Location	Contract Method and Type	Location of PCO	Award Date	Date of First Delivery	QTY Each	Unit Cost \$000	Specs Avail Now?	Date Revsn Avail	RFP Issue Date
HMMWV Mount / FY99 M6 Pedestal	Ramo Manufacture Inc., Nashville, TN	C/FFP (Option)	ARDEC	Jul-99	Mar-00	180	1			
M197 Mount	Ma-Tech Inc, Hebron, Va	SS/8A	TACOM-RI	Mar-00	Oct-00	3130				
HMMWV Mount / FY00 M6 Pedestal	TBS	C/FFP	ARDEC	Jul-00	Mar-01	500	2			
M197 Mount	TBS	C/FFP	TACOM-RI	Jun-00	Mar-01	2230				Mar 00
Dismount Kits/FY98	FNMI, Columbia, SC	SS/FFP	TACOM-RI	Sep-98	Jul-99	2000	1			
Dual Mount / FY98	TBS	C/FFP	TACOM-RI	Mar-00	Dec-00	1240	1			
Dual Mount / FY99	TBS	C/FFP	TACOM-RI	Mar-00	Mar-01	19	1			
Dual Mount / FY00	TBS	C/FFP	TACOM-RI			163	1			
M203/M4 Fire Control / FY01	TBS	C/FFP	ARDEC	Jan-01	Dec-01	2343	1			Oct 00
Sniper Accessory Kit / FY01	TBS	C/FFP	ARDEC	May-01	Oct-01	1062	1			Jun 00
FISTV/ITV Mount / FY00	TBS	C/FFP	ARDEC	Jun-00	Jan-00	2000				Mar 00

REMARKS:

**Exhibit P-40, Budget Item Justification Sheet**

Date:

February 2000

Appropriation / Budget Activity/Serial No:

PROCUREMENT OF WPNS & TRKD CMBT VEHS / 3 / Spares and Repair Parts

P-1 Item Nomenclature:

SPARES AND REPAIR PARTS (WTCV) (GE0150)

Program Elements for Code B Items:

Code:

Other Related Program Elements:

	Prior Years	FY 1997	FY 1998	FY 1999	FY 2000	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	To Complete	Total Prog
Proc Qty												
Gross Cost	25.6	20.2	16.1	20.1	22.7	29.1	36.9	36.0	33.4	33.4	243.6	517.1
Less PY Adv Proc												
Plus CY Adv Proc												
Net Proc (P-1)	25.6	20.2	16.1	20.1	22.7	29.1	36.9	36.0	33.4	33.4	243.6	517.1
Initial Spares												
Total Proc Cost	25.6	20.2	16.1	20.1	22.7	29.1	36.9	36.0	33.4	33.4	243.6	517.1
Flyaway U/C												
Wpn Sys Proc U/C												

**DESCRIPTION:** Provides for procurement of spares to support initial fielding of new or modified end items.

**JUSTIFICATION:** The funds in this account procure depot level reparable (DLR) secondary items from the Supply Management, Army activity of the Army Working Capital Fund. To provide initial support, funds are normally required in the same year that end items are fielded. Initial spares breakout:

	<b>FY99</b>	<b>FY00</b>	<b>FY01</b>
BFVS	7.1	9.1	11.5
M88A1E1 (Hercules)	0	0	2.8
HAB (Wolverine)	0.9	1.3	0
ABRAMS Upgrade	9.7	9.7	14.8
Cmd & Ctrl Veh (C2V)	2.4	2.6	0
<b>TOTAL</b>	<b>20.1</b>	<b>22.7</b>	<b>29.1</b>