

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2 Exhibit)

February 2004

BUDGET ACTIVITY

5 - System Development and Demonstration

PE NUMBER AND TITLE

0604622A - Family of Heavy Tactical Vehicles

COST (In Thousands)	FY 2003 Actual	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	Cost to Complete	Total Cost
Total Program Element (PE) Cost	13852	16875	2479	3467	43036	11887	11877	Continuing	Continuing
659 FAMILY OF HVY TAC VEH	30	1453	2479	2476	3468	991	989	Continuing	Continuing
E49 HEMTT	13822	14448	0	0	38577	9905	9899	Continuing	Continuing
E50 TRAILER DEVELOPMENT	0	974	0	991	991	991	989	Continuing	Continuing

A. Mission Description and Budget Item Justification: This program element aligns system development and demonstration of Heavy Tactical Vehicles with Future Force requirements to support combat and combat support missions. These missions include the following: line haul, local haul, and unit resupply. These trucks transport water, ammunition, and general cargo over all terrain and throughout the battle-space. FY2004 Project 659 provides funds for the development of a Crew Protection Kit on the M915 Family of Vehicles. FY2004 Project E49 provides funds for the prototype development of the HEMTT A3. FY2004 Project E50 provides funds to support the continued modernization of the Army's trailer fleets. It supports the continuous product improvements, technology insertion, and new capabilities for tactical trailers. This project supports the Current-to-Future transition path of the Transformation Campaign Plan (TCP).

B. Program Change Summary	FY 2003	FY 2004	FY 2005
Previous President's Budget (FY 2004)	14521	9200	10756
Current Budget (FY 2005 PB)	13852	16875	2479
Total Adjustments	-669	7675	-8277
Congressional program reductions		-159	
Congressional rescissions			
Congressional increases		7850	
Reprogrammings	-669	-16	
SBIR/STTR Transfer			
Adjustments to Budget Years			-8277

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<p>Funding - FY2004: Congressional increase supports the HEMTT A3 Program.</p> <p>FY2005: Decrease of \$10.756M in the Future Tactical Truck System Program.</p> <p>FY2005: Increase of \$2.479M for Movement Tracking Systems.</p>		

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PROJECT

659

COST (In Thousands)	FY 2003 Actual	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	Cost to Complete	Total Cost
659 FAMILY OF HVY TAC VEH	30	1453	2479	2476	3468	991	989	Continuing	Continuing

A. Mission Description and Budget Item Justification: FY 2004 Project 659 provides funds for the engineering development and prototype of the Crew Protection Kit for the M915 Family of Vehicles. The Crew Protection Kit will provide protection to the two-man crew against small arms, mines and artillery and is identified as a materiel requirement under an ORD for the Tactical Wheeled Vehicle Crew Protection Kit (CPK) dated 19 Jan 1996. FY2005 funding supports development of Block Modifications on the Movement Tracking System (MTS). This Block Modification will increase the performance and functionality of the MTS through multiple interface developments. This project supports the Current-to-Future transition path of the Transformation Campaign Plan (TCP).

Accomplishments/Planned Program	FY 2003	FY 2004	FY 2005
Development of the engineering and prototype models of the M915 Crew Protection Kit	30	110	0
Acquire prototypes for testing	0	500	0
Conduct prototype testing on the M915 Crew Protection Kit	0	800	0
Development of block modifications on the Movement Tracking System	0	0	2479
Small Business Innovative Research/Small Business Technology Transfer Programs	0	43	0
Totals	30	1453	2479

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<u>B. Other Program Funding Summary</u>	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	To Compl	Total Cost
OPA1 D15900, Truck, Tractor, Line Haul	38865	30162	2962	13142	17143	0	3508	0	148042
OPA1 D16103, Movement Tracking System	44005	17952	19078	24073	27193	35238	35353	0	202892
<u>C. Acquisition Strategy:</u> Limited RDTE effort to support follow-on production.									

ARMY RDT&E COST ANALYSIS(R3)									February 2004			
BUDGET ACTIVITY 5 - System Development and Demonstration					PE NUMBER AND TITLE 0604622A - Family of Heavy Tactical Vehicles					PROJECT 659		
I. Product Development	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2003 Cost	FY 2003 Award Date	FY 2004 Cost	FY 2004 Award Date	FY 2005 Cost	FY 2005 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . Program Management	IN-HOUSE	TACOM, Warren, MI	0	30	2-4Q	110	1-2Q	0		0	140	0
b . Crew Protection Kit System Development & Demonstration Award	C-CPFF	TBD	0	0		543	3Q	0		0	543	0
c . MTS Software Development, Engineering, Testing, Program Management	C/CPIF	TBD	0	0		0		2479	2Q	7924	10403	0
Subtotal:			0	30		653		2479		7924	11086	0
II. Support Cost	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2003 Cost	FY 2003 Award Date	FY 2004 Cost	FY 2004 Award Date	FY 2005 Cost	FY 2005 Award Date	Cost To Complete	Total Cost	Target Value of Contract
Subtotal:			0	0		0		0		0	0	0

ARMY RDT&E COST ANALYSIS(R3)									February 2004				
BUDGET ACTIVITY					PE NUMBER AND TITLE					PROJECT			
5 - System Development and Demonstration					0604622A - Family of Heavy Tactical Vehicles					659			
III. Test and Evaluation	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2003 Cost	FY 2003 Award Date	FY 2004 Cost	FY 2004 Award Date	FY 2005 Cost	FY 2005 Award Date	Cost To Complete	Total Cost	Target Value of Contract	
a . Crew Protection Kit Testing	MIPR	APG, Aberdeen, MD	0	0		800	4Q	0		0	800	0	
Subtotal:			0	0		800		0		0	800	0	
IV. Management Services	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2003 Cost	FY 2003 Award Date	FY 2004 Cost	FY 2004 Award Date	FY 2005 Cost	FY 2005 Award Date	Cost To Complete	Total Cost	Target Value of Contract	
Subtotal:			0	0		0		0		0	0	0	
Project Total Cost:			0	30		1453		2479		7924	11886	0	

Schedule Profile (R4 Exhibit)																						February 2004															
BUDGET ACTIVITY 5 - System Development and Demonstration												PE NUMBER AND TITLE 0604622A - Family of Heavy Tactical Vehicles																PROJECT 659									
Event Name		FY 03				FY 04				FY 05				FY 06				FY 07				FY 08				FY 09				FY 10							
		1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4								
Award SDD Contract																																					
Testing																																					
MTS Interface Development																																					

Schedule Detail (R4a Exhibit)	February 2004
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<p>al Vehicles</p>	<p>PROJECT 659</p>
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5 - System Development and Demonstration

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<u>Schedule Detail</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>	<u>FY 2008</u>	<u>FY 2009</u>
Award System Development & Demonstration contract for Crew Protection Kit		3Q					
Conduct testing on Crew Protection Kit		4Q	1-2Q				
MTS Continuous Block Improvements			2-3Q	1-4Q	1-4Q	1-4Q	1-4Q

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BUDGET ACTIVITY

5 - System Development and Demonstration

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0604622A - Family of Heavy Tactical Vehicles

PROJECT

E49

COST (In Thousands)	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	Cost to	Total Cost
	Actual	Estimate	Estimate	Estimate	Estimate	Estimate	Estimate	Complete	
E49 HEMTT	13822	14448	0	0	38577	9905	9899	Continuing	Continuing

A. Mission Description and Budget Item Justification: FY2004 funds the HEMTT A3 prototype development. The current tactical wheeled vehicle fleet cannot sustain the Future Force due to an outdated architecture that imposes severe limitations such as: the requirement for external material handling equipment, an increasingly cumbersome logistics footprint, poor C130 deployability, poor fuel economy, an outdated design that does not optimize 2 level maintenance, an inability to maintain the OPTEMPO of the future force pacing systems, and mobility limitations that will not allow true seamless, just in time support. The HEMTT vehicle program requires insertion of current, mature technology to increase the capability of the vehicle toward the future force requirements. This technology infusion will be accomplished through the HEMTT A3 program within the objective level capabilities of the current HEMTT ORD. This R&D effort will focus on the integration of technologies which will reduce vehicle fuel consumption; reduce vehicle weight; increase mobility; enable C130 transport with load; increase mobility rated speed; enable roll-on roll-off C130 transportability without prep; enable direct C130 unloading capabilities; embed diagnostics and prognostics using condition based maintenance; reduce logistics footprint and enable the optimization of 2-level maintenance concepts. Revised propulsion system, independent suspension, multiplexed electric system, and an enhanced Load Handling System are under consideration as key enablers to achieve the stated objectives. The crew cab environment will be optimized to integrate the Command, Control, Communication & Computers & Information, embedded Interactive Electronic Tech Manuals, climate control and personal crew storage space. Research efforts will be partnered with various Government Agencies, Industry Partners, and Academia to leverage existing ongoing technology development and integration efforts, and grow capabilities required to approach the future force capabilities. Prior to FY2004 funding supports development of a Block Modification on the Movement Tracking System (MTS). This Block Modification will increase the performance and functionality of the MTS through multiple interface developments. This project supports the Current-to-Future transition path of the Transformation Campaign Plan (TCP).

<u>Accomplishments/Planned Program</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>
Encryption Validation	0	0	0
User Functional Description (UFD) enhanced software development.	1300	0	0
Embedded Military Global Positioning System Selective Availability Anti-Spoofing Module interface development.	500	0	0
United States Army, Europe-Defense Transportation Recording And Control System interface development.	100	0	0
Automated Identification Technology/Radio Frequency Identification Device interface development.	100	0	0
Global Combat Support System-Army (Combat Service Support Control System/Force XXI Battle Command Battalion/Brigade and Below) interface development.	861	0	0

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PROJECT

E49

Accomplishments/Planned Program (continued)

	FY 2003	FY 2004	FY 2005
HEMTT advanced technology improvement development.	8177	4000	0
HEMTT advanced technology improvement prototypes.	2784	5500	0
Testing of HEMTT advanced technology improvements.	0	2000	0
Development of Condition Based Maintenance	0	2528	0
Small Business Innovative Research/Small Business Technology Transfer Programs	0	420	0
Totals	13822	14448	0

B. Other Program Funding Summary

	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	To Compl	Total Cost
OPA1, DA0500, Family of Heavy Tactical Vehicles	257983	217469	84038	126016	204967	177513	138906	1407746	2773737

C. Acquisition Strategy: HEMTT Block improvements will be developed as an advanced technology insertion for the HEMTT platform. The R&D technology insertion program will be accomplished through the HEMTT Original Equipment Manufacturer, Oshkosh Truck Corporation, as the System Integrator for the HEMTT program. The program will produce test vehicles that will undergo extensive performance and durability testing at government test facilities to validate the effectiveness and suitability of the enabling technologies. Award of a production contract will follow successful completion of government testing and evaluation. Condition Based Maintenance will be contracted with DRS Laurel to leverage and advance ruggedized sensor based technologies and diagnostic algorithm development.

ARMY RDT&E COST ANALYSIS(R3)									February 2004			
BUDGET ACTIVITY 5 - System Development and Demonstration					PE NUMBER AND TITLE 0604622A - Family of Heavy Tactical Vehicles					PROJECT E49		
I. Product Development	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2003 Cost	FY 2003 Award Date	FY 2004 Cost	FY 2004 Award Date	FY 2005 Cost	FY 2005 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . MTS Software Development, Engineering, Testing, Program Management	C/CPIF	TBD	2510	2861	3Q	0		0		0	5371	0
b . Technical Improvement Development - Government	IN HOUSE	TACOM, Warren, MI	0	300		0		0		0	300	0
c . Technical Improvement Development - Contractor	CPFF	Oshkosh Truck Corp., Oshkosh, WI	0	7877	2Q	4000	2Q	0		0	11877	0
d . Technical Improvement Prototypes	CPFF	Oshkosh Truck Corp., Oshkosh, WI	0	2784	4Q	5920	4Q	0		0	8704	0
e . FTTS Development			0	0		0		0		58381	58381	0
f . Condition Based Maintenance Development	CPFF	DRS Laurel	0	0		2528	2Q	0		0	2528	0
Subtotal:			2510	13822		12448		0		58381	87161	0

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BUDGET ACTIVITY					PE NUMBER AND TITLE					PROJECT			
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II. Support Cost	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2003 Cost	FY 2003 Award Date	FY 2004 Cost	FY 2004 Award Date	FY 2005 Cost	FY 2005 Award Date	Cost To Complete	Total Cost	Target Value of Contract	
			0	0		0		0		0	0	0	
Subtotal:													
III. Test and Evaluation	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2003 Cost	FY 2003 Award Date	FY 2004 Cost	FY 2004 Award Date	FY 2005 Cost	FY 2005 Award Date	Cost To Complete	Total Cost	Target Value of Contract	
a . HEMTT Technical Improvement Testing	MIPR	APG, Aberdeen, MD	0	0		2000	4Q	0		0	2000	0	
Subtotal:			0	0		2000		0		0	2000	0	

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IV. Management Services	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2003 Cost	FY 2003 Award Date	FY 2004 Cost	FY 2004 Award Date	FY 2005 Cost	FY 2005 Award Date	Cost To Complete	Total Cost	Target Value of Contract
			0	0		0		0		0	0	0
Subtotal:												
Project Total Cost:			2510	13822		14448		0		58381	89161	0

Schedule Profile (R4 Exhibit)																				February 2004												
BUDGET ACTIVITY 5 - System Development and Demonstration												PE NUMBER AND TITLE 0604622A - Family of Heavy Tactical Vehicles												PROJECT E49								
Event Name	FY 03				FY 04				FY 05				FY 06				FY 07				FY 08				FY 09				FY 10			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
MTS Interface Development																																
HEMTT TI Development																																
HEMTT A3 Production																																
HEMTT TI Prototypes																																
HEMTT TI Testing																																
(1) HEMTT A3 FUE																																

Schedule Detail (R4a Exhibit)						February 2004	
BUDGET ACTIVITY 5 - System Development and Demonstration			PE NUMBER AND TITLE 0604622A - Family of Heavy Tactical Vehicles			PROJECT E49	
<u>Schedule Detail</u>	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009
MTS Interface development	1-3Q						
HEMTT Technical Improvement development	2-4Q	1-3Q					
HEMTT Technical Improvement Prototypes	4Q	4Q					
HEMTT Technical Improvement Testing		4Q	1-4Q				
HEMTT A3 Production				4Q	1-4Q	1-4Q	1-4Q
HEMTT A3 FUE					2Q		

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PROJECT

E50

COST (In Thousands)	FY 2003 Actual	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	Cost to Complete	Total Cost
E50 TRAILER DEVELOPMENT	0	974	0	991	991	991	989	Continuing	Continuing

A. Mission Description and Budget Item Justification: This program element supports continued modernization of the Army's trailer fleets. The funds support continuous product improvements, technology insertion, and new capabilities for tactical trailers.

Current funding will enable feasibility testing of flatbed trailers in the M800 Series family with enhance mobility when towed by tractors and tactical vehicles which also have enhanced mobility. This project supports the Current-to-Future transition path of the Transformation Campaign Plan.

Accomplishments/Planned Program	FY 2003	FY 2004	FY 2005
Feasibility testing of enhanced M800 Series Semi-Trailers	0	213	0
Program Integration	0	264	0
Program Management	0	84	0
Enhanced M800 Series Semi-Trailer	0	385	0
Small Business Innovative Research/Small Business Technology Transfer Programs	0	28	0
Totals	0	974	0

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E50

B. Other Program Funding Summary

	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	To Compl	Total Cost
OPA1 D01600 Semi-Trailer FB BB/CONT TR 34T M872A4	20283	16682	1744	1762	1764	1044	9510	Continuing	Continuing
OPA 1 D00700 Semi-Trailer LB 40T M870A3	2267	1928	1567	582	423	108	0	0	6875
OPA 1 D01500 Semi-Trailer FB/BB/CONT TR 22 1/2 T M871A3	13893	8086	5931	3726	3862	8928	12229	Continuing	Continuing

C. Acquisition Strategy: Conduct feasibility testing on tactical semi-trailers with enhanced mobility and materiel handling characteristics when towed by improved tractors or tactical vehicles. Candidate systems are the M800 Series semi-trailers (M870/M871/M872). Program Integrator will be competitively selected. The goal is to identify concepts that would enhance a system's overall mobility through either modification of existing equipment or development of new equipment, and identify enhanced transportability and safety concepts through improved or innovative tie-down and lifting concepts.