

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

June 2001

BUDGET ACTIVITY  
**5 - ENG MANUFACTURING DEV**

PE NUMBER AND TITLE  
**0604642A - Light Tactical Wheeled Vehicle**

COST (In Thousands)	FY 2000 Actual	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	Cost to Complete	Total Cost
Total Program Element (PE) Cost	6639	9802	2523	0	0	0	0	0	0	0
E40 LTV PROTOTYPE	6356	7375	2523	0	0	0	0	0	0	0
E46 HMMWV RECAP	283	2427	0	0	0	0	0	0	0	0
E57 LIGHT TACTICAL TRAILER	0	0	0	0	0	0	0	0	0	0

**A. Mission Description and Budget Item Justification:**

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

This Program Element supports all Light Tactical Wheeled Vehicles such as the High Mobility Multi-Purpose Wheeled Vehicle (HMMWV), HMMWV Recapitalization Program, Hybrid Electric HMMWV, and the Light Tactical Vehicle Trailers. In FY 2002 and FY 2003, this Program Element funds the RDT&E effort for a Block Improvement Program through technology integration into the HMMWV, Hybrid Electric HMMWV and the HMMWV Recapitalization Program. This project supports the Legacy to Objective transition path of the Transformation Campaign Plan (TCP).

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<u><b>B. Program Change Summary</b></u>	FY 2000	FY 2001	FY 2002	FY 2003
Previous President's Budget (FY2001 PB)	7441	9893	979	0
Appropriated Value	7498	9893	0	
Adjustments to Appropriated Value	0	0	0	
a. Congressional General Reductions	0	0	0	
b. SBIR / STTR	-200	0	0	
c. Omnibus or Other Above Threshold Reductions	-31	0	0	
d. Below Threshold Reprogramming	-602	0	0	
e. Rescissions	-26	-91	0	
Adjustments to Budget Years Since FY2001 PB	0	0	1544	
Current Budget Submit (FY 2002/2003 PB )	6639	9802	2523	0

FY 2002/2003 - Funding added to support HMMWV development.

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

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BUDGET ACTIVITY <b>5 - ENG MANUFACTURING DEV</b>				PE NUMBER AND TITLE <b>0604642A - Light Tactical Wheeled Vehicle</b>				PROJECT <b>E40</b>		
COST (In Thousands)	FY 2000 Actual	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	Cost to Complete	Total Cost
E40 LTV PROTOTYPE	6356	7375	2523	0	0	0	0	0	0	0

**A. Mission Description and Budget Item Justification:** The HMMWV is a lightweight, high performance, four-wheel drive, air transportable and air droppable, high mobility tactical wheeled vehicle. The HMMWV consists of a basic design with several variants including Cargo/Utility, Armament Carrier, Ambulance, Shelter Carrier and Armored Armament Carrier. FY 2002 and FY 2003 funds HMMWV modernization effort as well as the development of a Hybrid Electric (HE) HMMWV. The modernization effort leverages advancement in commercial and military truck technology for insertion into the HMMWV. This effort will address changes to the Federal Motor Vehicle Safety Standards (FMVSS), including anti-lock brakes and changes to environmental requirements for the engine. New commercial technology, combined with greater achievement of user requirements, will result in an improved HMMWV. Developmental testing will begin in FY 2002. Testing will include reliability and maintainability (RAM), environmental, transportability, and automotive. The Hybrid Electric (HE) HMMWV is an Army initiative to reduce vehicle Operation and Sustainment (O&S) costs, fuel consumption, and the logistical footprint while providing the opportunity for enhanced electric power and silent watch operation. This initiative has a potential savings of 30% in O&S costs alone. JSTARS, STRIKER, THAAD, SENTINEL, and LOSAT PMs are potential users of the HE HMMWV. The HMMWV supports the Legacy to Objective transition path of the Transformation Campaign Plan (TCP).

**FY 2000 Accomplishments**

- 5922 HMMWV Modernization Development Contract
  - 184 Support Costs (Engineering/Quality/Matrix)
  - 250 Test Start-up - HMMWV Modernization
- Total 6356

**ARMY RDT&E BUDGET ITEM JUSTIFICATION (R-2A Exhibit)****June 2001**

BUDGET ACTIVITY

**5 - ENG MANUFACTURING DEV**

PE NUMBER AND TITLE

**0604642A - Light Tactical Wheeled Vehicle**

PROJECT

**E40****FY 2001 Planned Program**

- 6870 HMMWV Modernization Development Contract
- 286 Support Costs (Engineering/Quality/Matrix Support)
- 219 SBIR/STTR

Total 7375

**FY 2002 Planned Program**

- 708 HMMWV Modernization Development Contract
- 450 Assemble and test up to ten prototype vehicles - HMMWV Modernization
- 562 Support Costs (Engineering/Quality/Matrix Support)
- 803 HE HMMWV Development Contract

Total 2523

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PROJECT  
**E40**

<b><u>B. Other Program Funding Summary</u></b>	<b>FY 2000</b>	<b>FY 2001</b>	<b>FY 2002</b>	<b>FY 2003</b>	<b>FY 2004</b>	<b>FY 2005</b>	<b>FY 2006</b>	<b>FY 2007</b>	<b>To Compl</b>	<b>Total Cost</b>
OPA1 Hi Mob Multi-Purp Whld Veh (D15400)	91302	136781	130821	0	0	0	0	0	0	0
OPA4 Initial Spares - TSV DS1030	72	0	0	0	0	0	0	0	0	0

**C. Acquisition Strategy:** The acquisition strategy for the HMMWV Modernization Program is to award a block improvement engineering change proposal award to the production contract.  
Strategy for the Hybrid Electric HMMWV is to award a competitive development contract.

<b><u>D. Schedule Profile</u></b>	<b>FY 2000</b>	<b>FY 2001</b>	<b>FY 2002</b>	<b>FY 2003</b>	<b>FY 2004</b>	<b>FY 2005</b>	<b>FY 2006</b>	<b>FY 2007</b>
Award HMMWV Development Contract - Modernization Program	3Q			0	0	0	0	0
Developmental Test & Evaluation			1Q	0	0	0	0	0
IPR Decision - HMMWV Modernization Program			4Q	0	0	0	0	0
Award Production Contract - HMMWV Modernization				0	0	0	0	0
Award HE HMMWV Development Contract				0	0	0	0	0
Govt Testing - HE HMMWV				0	0	0	0	0

## ARMY RDT&E COST ANALYSIS(R-3)

**June 2001**

**BUDGET ACTIVITY**  
**5 - ENG MANUFACTURING DEV**

**PE NUMBER AND TITLE**  
**0604642A - Light Tactical Wheeled Vehicle**

**PROJECT**  
**E40**

I. Product Development	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2001 Cost	FY 2001 Award Date	FY 2002 Cost	FY 2002 Award Date	FY 2003 Cost	FY 2003 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . Development Contract - HMMWV Modernization	SS/CPFF	AM General, Mishawaka, IN	5922	6870	2Q	708	2Q	0	0	0	0	0
b . Engineering Support - HMMWV Modernization	N/A	AMSAA, APG, MD	67	0		0		0	0	0	0	0
c . Engineering Support - HMMWV Modernization	N/A	WES, Vicksburg, MS	117	0		0		0	0	0	0	0
d . In-House Engineering (TACOM)	N/A	TACOM, Warren, MI	0	505	2-4Q	562	1-4Q	0	0	0	0	0
e . Development Contract - HE HMMWV	SS/CPFF	TBS	0	0		803	2Q	0	0	0	0	0
Subtotal:			6106	7375		2073		0		0	0	0

Remarks: Development Contract includes cost of a Technical Data Package (TDP) upon completion of the R&D Phase.

## ARMY RDT&E COST ANALYSIS(R-3)

**June 2001**

**BUDGET ACTIVITY**  
**5 - ENG MANUFACTURING DEV**

**PE NUMBER AND TITLE**  
**0604642A - Light Tactical Wheeled Vehicle**

**PROJECT**  
**E40**

II. Support Cost	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2001 Cost	FY 2001 Award Date	FY 2002 Cost	FY 2002 Award Date	FY 2003 Cost	FY 2003 Award Date	Cost To Complete	Total Cost	Target Value of Contract
Subtotal:			0	0		0		0		0	0	0

Remarks: Not applicable

III. Test and Evaluation	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2001 Cost	FY 2001 Award Date	FY 2002 Cost	FY 2002 Award Date	FY 2003 Cost	FY 2003 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . Developmental Testing - HMMWV Modernization	N/A	ATC, Aberdeen, MD	250	0		450	1Q	0	0	0	0	0
b . Developmental Testing - HE HMMWV	N/A	ATC, Aberdeen, MD	0	0		0		0	0	0	0	0
Subtotal:			250	0		450		0		0	0	0

Remarks: Testing will include RAM, environmental, transportability, and automotive testing.

# ARMY RDT&E COST ANALYSIS(R-3)

**June 2001**

**BUDGET ACTIVITY**  
**5 - ENG MANUFACTURING DEV**

**PE NUMBER AND TITLE**  
**0604642A - Light Tactical Wheeled Vehicle**

**PROJECT**  
**E40**

IV. Management Services	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2001 Cost	FY 2001 Award Date	FY 2002 Cost	FY 2002 Award Date	FY 2003 Cost	FY 2003 Award Date	Cost To Complete	Total Cost	Target Value of Contract
Subtotal:			0	0		0		0		0	0	0
Remarks: Not applicable												
Project Total Cost:			6356	7375		2523		0		0	0	0

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

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BUDGET ACTIVITY <b>5 - ENG MANUFACTURING DEV</b>				PE NUMBER AND TITLE <b>0604642A - Light Tactical Wheeled Vehicle</b>				PROJECT <b>E46</b>		
COST (In Thousands)	FY 2000 Actual	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	Cost to Complete	Total Cost
E46 HMMWV RECAP	283	2427	0	0	0	0	0	0	0	0

**A. Mission Description and Budget Item Justification:** The HMMWV Recapitalization Program is a remanufacture program to extend the life of the over age HMMWVs. The HMMWV fleet is experiencing increased Operation and Support (O&S) costs, excessive wear, and corrosion. These HMMWVs are in need of replacement/remanufacture. The HMMWV Recapitalization Program will provide operational and safety improvements to the current fleet of vehicles and will extend the useful service life by 21 years. The recapitalized HMMWVs may include enhanced performance capability such as anti-lock brakes, new engine, new transmission and improved diagnostic capability. These improvements will be achieved by a combination of component remanufacture and replacement to include over 50 mandatory replacement components that have been tested on previous versions of the HMMWV. Components, which have been improved during the evolution of the Commercially Based Tactical Truck (COMBATT) demonstration of commercial technology, will also be incorporated in the recapitalized vehicles where technically and economically feasible. The objective of the HMMWV Recapitalization Program is to extend the useful service life of the vehicles. In FY 2005, 60% of the HMMWV fleet will be over-aged. Technology insertion opportunities will be developed, targeted on reducing overall O&S costs and improving performance. Examples are corrosion protection, digitization requirements, Hybrid Electric (HE) kits and other O&S cost drivers. The HMMWV Remanufacture Program supports the Legacy to Objective transition path of the Transformation Campaign Plan (TCP).

**FY 2000 Accomplishments**

- 98 HE HMMWV Transportability Study
  - 100 Test Planning - HE Kits
  - 85 Support Costs (engineering/quality/matrix)
- Total 283

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PROJECT  
**E46**

**FY 2001 Planned Program**

- 1200 HE HMMWV Kit Development
  - 1000 Testing of HE HMMWV Kits (2 Kits)
  - 155 Support Costs (engineering/quality/matrix support)
  - 72 SBIR/STTR
- Total 2427

**B. Other Program Funding Summary**

	FY 2000	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	To Compl	Total Cost
OPA-1 Hi Mob Multi-Purp Whld Veh (D15400)	91302	136781	130821	0	0	0	0	0	0	0

**C. Acquisition Strategy:** The HMMWV Recapitalization strategy will consist of a competitively awarded R&D contract to determine the feasibility of incorporating technology insertion into the HMMWV platform. This technology insertion includes anti-lock brakes, a new engine and transmission and improved diagnostics. The selected contractor will provide hardware for government evaluation as well as a technical data package of the final vehicle configuration which will be suitable for a competitive production award. Hybrid Electric HMMWV Kits will be developed by the current HMMWV producer and procured through the HMMWV production contract.

**D. Schedule Profile**

	FY 2000	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007
Award HE HMMWV Kit Development		2Q		0	0	0	0	0
Testing of HE Kits		3Q		0	0	0	0	0

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**PROJECT**  
**E46**

I. Product Development	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2001 Cost	FY 2001 Award Date	FY 2002 Cost	FY 2002 Award Date	FY 2003 Cost	FY 2003 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . In-House Support	N/A	Warren, MI	85	227		0		0	0	0	0	0
b . HE C-130 Transportability Study	SS/FFP	AM General, Mishawaka, IN	98	0		0		0	0	0	0	0
c . HE Kit Development	SS/CPFF	AM General, Mishawaka, IN	0	1200	2Q	0		0	0	0	0	0
Subtotal:			183	1427		0		0		0	0	0

II. Support Cost	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2001 Cost	FY 2001 Award Date	FY 2002 Cost	FY 2002 Award Date	FY 2003 Cost	FY 2003 Award Date	Cost To Complete	Total Cost	Target Value of Contract
Subtotal:			0	0		0		0		0	0	0

Remarks: Not applicable

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**PROJECT**  
**E46**

III. Test and Evaluation	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2001 Cost	FY 2001 Award Date	FY 2002 Cost	FY 2002 Award Date	FY 2003 Cost	FY 2003 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . Testing of HE Kits	SS/CPFF	NATC, Carson City, Nevada	100	1000	3Q	0		0	0	0	0	0
Subtotal:			100	1000		0		0		0	0	0

IV. Management Services	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2001 Cost	FY 2001 Award Date	FY 2002 Cost	FY 2002 Award Date	FY 2003 Cost	FY 2003 Award Date	Cost To Complete	Total Cost	Target Value of Contract
Subtotal:			0	0		0		0		0	0	0

Remarks: Not applicable

Project Total Cost:			283	2427		0		0		0	0	0
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