

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

February 2002

BUDGET ACTIVITY  
**5 - Engineering and manufacturing development**

PE NUMBER AND TITLE  
**0604223A - COMANCHE**

COST (In Thousands)	FY 2001 Actual	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	590771	781307	910160	1003591	943682	453065	836472	Continuing	Continuing
2LT COMANCHE OPER TEST	18	165	144	1265	1416	8894	5105	Continuing	Continuing
327 COMANCHE	565825	726789	860001	959263	898023	416519	817558	Continuing	Continuing
C72 T-800 ENGINE ED (LH)	24928	54353	50015	43063	44243	27652	13809	Continuing	Continuing

**A. Mission Description and Budget Item Justification:** This program element provides for the development and operational testing and evaluation of the RAH-66 Comanche and the T802 engine. The Comanche is a multi-mission aircraft optimized for the critical battlefield mission of tactical armed reconnaissance. It provides a globally self-deployable attack platform for light/contingency forces. Comanche provides the solution to reconnaissance deficiencies of no night/adverse weather/high/hot/stand-off capability and is a key component on the digitized battlefield in winning the information war. The Comanche is the Army's technology leader and provides significant horizontal technology transfer within the Army and DoD. Project C72 provides for continued development and qualification of the T802 engine and air vehicle support for integration into the Comanche aircraft. Project 2LT includes funding for the operational testing of Comanche to include modeling and simulation accreditation for Early User Test, Limited User Test and Initial Operational Test and Evaluation. Project 327 provides for development of the airframe, mission equipment package, integration and qualification of the complete system to include logistic support, training, and training devices. This system supports the Objective transition path of the Transformation Campaign Plan.

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<u><b>B. Program Change Summary</b></u>	FY 2001	FY 2002	FY 2003
Previous President's Budget (FY2002 PB)	608410	787866	751347
Appropriated Value	614041	787866	0
Adjustments to Appropriated Value	0	0	0
a. Congressional General Reductions	0	-6559	0
b. SBIR / STTR	-17911	0	0
c. Omnibus or Other Above Threshold Reductions	0	0	0
d. Below Threshold Reprogramming	271	0	0
e. Rescissions	-5630	0	0
Adjustments to Budget Years Since FY2002 PB	0	0	158813
Current Budget Submit (FY 2003 PB )	590771	781307	910160

FY03: Additional funds provided to fully fund current program alternatives under review by the Army.

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<b>BUDGET ACTIVITY</b> <b>5 - Engineering and manufacturing development</b>				<b>PE NUMBER AND TITLE</b> <b>0604223A - COMANCHE</b>				<b>PROJECT</b> <b>2LT</b>	
COST (In Thousands)	FY 2001 Actual	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	Cost to Complete	Total Cost
2LT COMANCHE OPER TEST	18	165	144	1265	1416	8894	5105	Continuing	Continuing

**A. Mission Description and Budget Item Justification:** This project provides for progressive test requirements in support of the test and fielding of the RAH-66 Comanche helicopter. Requisite activities include Force Development Test and Experimentation (FDTE) I, II, III and IV dedicated to tactics, techniques and procedures, and Limited User Test (LUT) that provide operational input early in the system's life cycle, the Army Training Evaluation Program (ARTEP) and Initial Operational Test and Evaluation (IOT&E) in support of a Milestone III production decision.

**FY 2001 Accomplishments:**

- 18 Independent evaluation at contractor test facility in support of LUT and prepare for FDTE I
- Total 18

**FY 2002 Planned Program**

- 65 Independent evaluation at contractor test facility in support of LUT
  - 50 Validate four crew station simulators (Comanche Portable Cockpits) in preparation for FDTE I. Conduct FDTE I
  - 50 Instrumentation and Targets to support FDTE III
- Total 165

**FY 2003 Planned Program**

- 97 Independent evaluation at contractor test facility in support of LUT
  - 47 Instrumentation and Targets to support FDTE III
- Total 144

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PROJECT  
**2LT**

**B. Other Program Funding Summary**

	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	To Compl	Total Cost
A08300 Comanche	0	0	0	0	469934	1033343	1736096	34406976	37646349

**C. Acquisition Strategy:** This project is for test and evaluation effort to support Comanche acquisition.

**D. Schedule Profile**

	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007
Conduct independent evaluation at contractor test facility supporting LUT	1-4Q	1-4Q	1-4Q	1-4Q	1Q		
Prepare for LUT		4Q	1-4Q	1-4Q	1-3Q		
Prepare for FDTE I	4Q	1-2Q					
Conduct FDTE I		2-3Q					
Prepare for FDTE II				4Q			
Conduct FDTE II					1Q		
Prepare for FDTE III		4Q	1-4Q	1-4Q	1-4Q		
Conduct FDTE III					4Q		
Conduct LUT						1Q	
Prepare for FDTE IV and ARTEP							4Q

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BUDGET ACTIVITY <b>5 - Engineering and manufacturing development</b>				PE NUMBER AND TITLE <b>0604223A - COMANCHE</b>				PROJECT <b>327</b>	
COST (In Thousands)	FY 2001 Actual	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	Cost to Complete	Total Cost
327 COMANCHE	565825	726789	860001	959263	898023	416519	817558	Continuing	Continuing

**A. Mission Description and Budget Item Justification:** The Comanche helicopter is a highly sustainable and operationally flexible armed reconnaissance light helicopter, incorporating significant reductions in personnel and support equipment, capturing the latest combat technologies and capable of accepting upgrades to meet ever-changing threats. It will dominate the battlefield in the close, deep and rear operations and provide a decisive air cavalry capability in day, night, and adverse weather. It will be operationally tailorable to regional conflicts and provide the battle commander with timely, detailed reconnaissance information and an unprecedented level of lethality.

**FY 2001 Accomplishments:**

- 228249 Continue MEP development
- 206565 Continue EMD engineering development
- 78914 Continue component development testing and prototype flight test program for prototypes #1 and #2
- 52097 Begin material procurement/manufacture of eleven EMD aircraft (test articles), five development test, six Initial Training Capability (ITC) aircraft

Total 565825

**FY 2002 Planned Program**

- 244164 Continue MEP development
- 273245 Continue EMD engineering development
- 105618 Continue component development testing and prototype flight test program
- 103762 Continue material procurement/manufacture of eleven EMD aircraft (test articles), five development test, six ITC aircraft

Total 726789

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PROJECT

**327****FY 2003 Planned Program**

- 285947 Continue MEP development
- 292513 Continue EMD engineering development
- 124839 Continue component development testing and prototype flight test program
- 156702 Continue material procurement/manufacture of eleven EMD aircraft (test articles), five development test, 6 ITC aircraft

Total 860001

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**PROJECT**  
**327**

<b><u>B. Other Program Funding Summary</u></b>	<b><u>FY 2001</u></b>	<b><u>FY 2002</u></b>	<b><u>FY 2003</u></b>	<b><u>FY 2004</u></b>	<b><u>FY 2005</u></b>	<b><u>FY 2006</u></b>	<b><u>FY 2007</u></b>	<b><u>To Compl</u></b>	<b><u>Total Cost</u></b>
A08300 Comanche	0	0	0	0	469934	1033343	1736096	34406976	37646349

**C. Acquisition Strategy:** Continue work with current contractor leading to production.

<b><u>D. Schedule Profile</u></b>	<b><u>FY 2001</u></b>	<b><u>FY 2002</u></b>	<b><u>FY 2003</u></b>	<b><u>FY 2004</u></b>	<b><u>FY 2005</u></b>	<b><u>FY 2006</u></b>	<b><u>FY 2007</u></b>
Continue MEP development	1-4Q						
Continue EMD Program engineering development	1-4Q						
Continue development testing and prototype flight test program	1-4Q						
Begin/Continue material procurement/manufacture of EMD aircraft	1-4Q	1-4Q	1-4Q	1-4Q	1-4Q	1-2Q	
Delivery of EMD aircraft					3-4Q	1-2Q	
Conduct development testing and flight test of acft #3 thru 6				3-4Q	1-4Q	1-4Q	1-4Q
Conduct flight test of acft #7 thru 15 and conduct IOT&E					2-4Q	1-4Q	1-4Q

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

**February 2002**

**BUDGET ACTIVITY**  
**5 - Engineering and manufacturing development**

**PE NUMBER AND TITLE**  
**0604223A - COMANCHE**

**PROJECT**  
**327**

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 . DAAJ23-00-C-A001	C/PAF	Boeing Sikorsky, PA	155629	525812	1-2Q	678585	1-2Q	805929	1-2Q	Continue	2165955	3152978
b . DAAJ09-91-C-A004	C/CPIF	Boeing Sikorsky, PA	2927066	0		0		0		0	2927066	2930631
c . DAAJ09-87-D-A022	C/FFP	Veridian, VA	61996	6663	2Q	6194	1-2Q	6310	1-2Q	0	81163	Continue
d . Other Contracts	C/T&M	Multiple	2088	3170	1-3Q	7944	1-3Q	6109	1-3Q	Continue	19311	Continue
e . Completed Contracts			370288	0		0		0		0	370288	370288
f . Gov't Agencies	MIPR	Multiple	3641	480	1-4Q	480	1-4Q	489	1-4Q	Continue	5090	Continue
<b>Subtotal:</b>			3520708	536125		693203		818837		Continue	5568873	Continue

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

**February 2002**

BUDGET ACTIVITY

PE NUMBER AND TITLE

PROJECT

**5 - Engineering and manufacturing development**

**0604223A - COMANCHE**

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II. Support Cost	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2001 Cost	FY 2001 Award Date	FY 2002 Cost	FY 2002 Award Date	FY 2003 Cost	FY 2003 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . Other Contracts	C/T&M	Multiple	36058	8760	1-3Q	5013	1-3Q	5107	1-3Q	Continue	54938	Continue
b . Completed Contracts	C/FFP		15556	0		0		0		0	15556	15556
c . Gov't Agencies	MIPR	Multiple	125257	8428	1-4Q	11161	1-4Q	12054	1-4Q	Continue	156900	Continue
Subtotal:			176871	17188		16174		17161		Continue	227394	Continue

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 . Government Agencies	MIPR	Multiple	25772	2272	1-4Q	5833	1-4Q	11581	1-4Q	Continue	45458	Continue
Subtotal:			25772	2272		5833		11581		Continue	45458	Continue

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

**February 2002**

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PE NUMBER AND TITLE

PROJECT

**5 - Engineering and manufacturing development**

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IV. Management Services	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2001 Cost	FY 2001 Award Date	FY 2002 Cost	FY 2002 Award Date	FY 2003 Cost	FY 2003 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . Other Contracts	C/T&M	Multiple	5690	1415	1-3Q	1353	1-3Q	1378	1-3Q	Continue	9836	Continue
b . PMO/Gov't Agencies	MIPR	Multiple	14276	8825	1-4Q	10226	1-4Q	11044	1-4Q	Continue	44371	Continue
Subtotal:			19966	10240		11579		12422		Continue	54207	Continue
Project Total Cost:			3743317	565825		726789		860001		Continue	5895932	Continue

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BUDGET ACTIVITY <b>5 - Engineering and manufacturing development</b>				PE NUMBER AND TITLE <b>0604223A - COMANCHE</b>				PROJECT <b>C72</b>	
COST (In Thousands)	FY 2001 Actual	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	Cost to Complete	Total Cost
C72    T-800 ENGINE ED (LH)	24928	54353	50015	43063	44243	27652	13809	Continuing	Continuing

**A. Mission Description and Budget Item Justification:** This project includes tasks to develop, design, fabricate, test and qualify a turbo shaft engine of the latest technology. The engine is to be furnished by the US Army to the Comanche weapon system integrator. This engine is the only propulsion source being considered for the Comanche program. The requested budget provides for the continued development and qualification of all T800 variants being used in the Comanche program and include: T802 engine, which adds 70 shaft horsepower to the 801 variant. Also included are Life Cycle Cost reduction analyses as well as initiatives for spiral/block change evolution of the design.

**FY 2001 Accomplishments:**

- 4876     Continue engine air vehicle support
- 17857    Continue contractor development/qualification testing
- 2195     Begin EMD program engine material procurement/manufacturing. Up to thirty-four engines (test articles) being procured to be delivered in FY 03 and FY 04 for Comanche EMD aircraft

Total 24928

**FY 2002 Planned Program**

- 4952     Continue engine air vehicle support
- 28401    Continue contractor development/qualification testing
- 21000    Continue EMD program engine manufacturing. Up to thirty-four engines (test articles) to be delivered in FY 03 and FY 04 for Comanche EMD aircraft

Total 54353

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**0604223A - COMANCHE**

**PROJECT**  
**C72**

**FY 2003 Planned Program**

- 6814 Continue engine air vehicle support
- 16932 Continue contractor development/qualification testing
- 26269 Continue EMD program engine manufacturing. Up to thirty-four engines (test articles) to be delivered in FY 03 and FY 04 for Comanche EMD aircraft

Total 50015

<b><u>B. Other Program Funding Summary</u></b>	<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>	<u>To Compl</u>	<u>Total Cost</u>
A08300 Comanche	0	0	0	0	469934	1033343	1736096	34406976	37646349

**C. Acquisition Strategy:** Continue work with current contractor leading to FAA certification, military qualification and production.

<b><u>D. Schedule Profile</u></b>	<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>
Complete mfg of growth engines for flight test	3Q						
Continue contractor development/qualification of T802 engine design	1-4Q	1-4Q	1-4Q	1-4Q	1-2Q		
Continue engine air vehicle support of Comanche EMD	1-4Q						
Begin/Continue EMD engine material procurement/manufacturing	3-4Q	1-4Q	1-4Q	1-4Q			
Deliveries of EMD engines			4Q	1-4Q			

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**PROJECT**  
**C72**

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 . DAAJ09-92-C-0453	C/CPFF	LHTEC, Indiana	327262	24853	1Q	54193	1-2Q	49905	1-2Q	Continue	456213	Continue
b . DAAJ09-85-C-B017	C/FFP	LHTEC, Indiana	276821	0		0		0		0	276821	276821
c . DAAJ09-93-C-0518	C/CPFF	LHTEC, Indiana	460	0		0		0		0	460	460
d . DAAJ09-85-C-B019	C/FFP	AVCO/PW, Connecticut	128526	0		0		0		0	128526	128526
e . Gov't Agencies	MIPR	Multiple	14227	75	1-4Q	100	1-4Q	110	1-4Q	Continue	14512	0
<b>Subtotal:</b>			747296	24928		54293		50015		Continue	876532	Continue

II. Support Cost	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2001 Cost	FY 2001 Award Date	FY 2002 Cost	FY 2002 Award Date	FY 2003 Cost	FY 2003 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . PATS contracts	C/FFP		96	0		0		0		0	96	96
b . Rail	C/FFP		2806	0		0		0		0	2806	2806
c . Other Contracts	Agreement		400	0		0		0		0	400	400
<b>Subtotal:</b>			3302	0		0		0		0	3302	3302

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**PROJECT**  
**C72**

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 . Government Agencies	MIPR	Multiple	23681	0		60	2Q	0		0	23741	Continue
b . Contracts			2	0		0		0		0	2	0
Subtotal:			23683	0		60		0		0	23743	Continue

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: None

Project Total Cost:			774281	24928		54353		50015		Continue	903577	Continue
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