

UNCLASSIFIED

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R-2 Exhibit)	DATE February 2000
---	------------------------------

BUDGET ACTIVITY 5 - Engineering and Manufacturing Development	PE NUMBER AND TITLE 0604223A Comanche
--	--

COST (In Thousands)	FY1999 Actual	FY 2000 Estimate	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	FY2004 Estimate	FY2005 Estimate	Cost to Complete	Total Cost
Total Program Element (PE) Cost	352217	463124	614041	764621	738441	762673	407979	Continuing	Continuing
DC72 T800 Engine Engineering Development (LH)	29055	33274	38619	54565	48221	41668	11203	Continuing	Continuing
D2LT Comanche Operational Test	0	49	19	716	5942	1169	4798	Continuing	Continuing
D327 Comanche	323162	429801	575403	709340	684278	719836	391978	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 T800 growth 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 DC72 provides for continued development and qualification of the T800 growth engine and air vehicle support for integration into the Comanche aircraft. Project D2LT 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 D327 provides for development of the airframe, mission equipment package, integration and qualification of the complete system to include training and logistic support.

B. Program Change Summary	<u>FY 1999</u>	<u>FY 2000</u>	<u>FY 2001</u>
Previous President's Budget (<u>FY 2000/2001</u> PB)	364784	427069	565800
Appropriated Value	367823	467069	
Adjustments to Appropriated Value			
a. Congressional General Reductions	-3039		
b. SBIR / STTR	-11504		
c. Omnibus or Other Above Threshold Reductions		-1887	
d. Below Threshold Reprogramming	+757		
e. Rescissions	-1820	-2058	
Adjustments to Budget Years Since <u>FY 2000/2001</u> PB			+48241
Current Budget Submit (FY 2001 PB)	352217	463124	614041

UNCLASSIFIED

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R-2A Exhibit)								DATE February 2000	
BUDGET ACTIVITY 5 - Engineering and Manufacturing Development				PE NUMBER AND TITLE 0604223A Comanche				PROJECT DC72	
COST (In Thousands)	FY1999 Actual	FY 2000 Estimate	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	FY2004 Estimate	FY2005 Estimate	Cost to Complete	Total Cost
DC72 T800 Engine Engineering Development (LH)	29055	33274	38619	54565	48221	41668	11203	Continuing	Continuing
<p>A. <u>Mission Description and Justification:</u> This project includes tasks to design, develop and qualify an advanced technology engine. It provides for the continued development and qualification of the T800 growth engines and air vehicle support for integration of same into the Comanche aircraft. The growth engine is for the Army's RAH-66 Comanche and other applications.</p> <p>FY 1999 Accomplishments:</p> <ul style="list-style-type: none"> • 15501 Continued growth engine development • 9198 Continued contractor development testing • 2001 Completed manufacturing of growth engines for flight test. Seven test articles procured to be delivered FY99 and FY00 for Comanche • 2355 Continued engine air vehicle support <p>Total 29055</p> <p>FY 2000 Planned Program:</p> <ul style="list-style-type: none"> • 9835 Begin Pre-Production Prototype (PPP) program air vehicle support • 7940 Continue contractor development testing • 14603 Productionization of T801 engine design • 896 Small Business Innovation Research/Small Business Technology Transfer (SBIR/STTR) programs <p>Total 33274</p> <p>FY 2001 Planned Program:</p> <ul style="list-style-type: none"> • 9997 Continue PPP program air vehicle support • 9343 Continue contractor development testing • 7153 Productionization of T801 engine design • 12126 Begin PPP program engine manufacturing. Thirty-four engines (test articles) being procured to be delivered FY 03 and FY 04 for Comanche PPP aircraft <p>Total 38619</p> <p>B. <u>Other Program Funding Summary:</u> There are no other related RDT&E or other appropriation efforts.</p>									
Project DC72			Page 2 of 10 Pages				Exhibit R-2A (PE 0604223A)		

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R-2A Exhibit)	DATE February 2000
--	------------------------------

BUDGET ACTIVITY 5 - Engineering and Manufacturing Development	PE NUMBER AND TITLE 0604223A Comanche	PROJECT DC72
--	--	-------------------------------

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

D. <u>Schedule Profile</u>	<u>FY 1999</u>	<u>FY 2000</u>	<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>
Continue growth engine development	1-4Q						
Continue contractor development testing	1-4Q	1-4Q	1-4Q	1-4Q	1-4Q	1-3Q	
Continue mfg growth engines for flight test	1-4Q						
Continue engine air vehicle support	1Q						
Complete mfg of growth engines for flight test	4Q						
Begin Pre-Production Prototype (PPP) Program air vehicle support		1-4Q					
Productionization of T801 engine design		2-4Q	1-4Q	1-4Q	1-4Q	1-3Q	
Continue PPP Program air vehicle support			1-4Q	1-4Q	1-4Q	1-4Q	1-4 Q
Begin PPP engine manufacturing			1-4Q				
Continue PPP engine manufacturing				1-4Q	1-4Q	1-4Q	

UNCLASSIFIED

ARMY RDT&E COST ANALYSIS (R-3)

DATE
February 2000

BUDGET ACTIVITY
5 - Engineering and Manufacturing Development

PE NUMBER AND TITLE
0604223A Comanche

PROJECT
DC72

I. Product Development	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 1999 Cost	FY 1999 Award Date	FY 2000 Cost	FY 2000 Award Date	FY 2001 Cost	FY 2001 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a. DAAJ09-92-C-0453	C/CPFF	LHTEC, Indiana	273965	28457	Nov 98	32970	Dec 99	38319	Dec 00	Cont	373711	Cont
b. DAAJ09-85-C-B017	C/FFP	LHTEC, Indiana	276821							0	276821	276821
c. DAAJ09-93-C-0518	C/CPFF	LHTEC, Indiana	460							0	460	460
d. DAAJ09-85-C-B019	C/FFP	AVCO, Connecticut	128526							0	128526	128526
e. Gov't Agencies	MIPR		13993	173	Qtrly	150	Qtrly	220	Qtrly		14536	
Subtotal Product Development			693765	28630		33120		38539			794054	

II. Support Costs	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 1999 Cost	FY 1999 Award Date	FY 2000 Cost	FY 2000 Award Date	FY 2001 Cost	FY 2001 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a. PATS contracts	C/FFP		96							0	96	96
b. Rail	C/FFP		2806							0	2806	2806
c. Other Contracts	Agreement		400							0	400	400
Subtotal Support Costs:			3302								3302	3302

III. Test and Evaluation	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 1999 Cost	FY 1999 Award Date	FY 2000 Cost	FY 2000 Award Date	FY 2001 Cost	FY 2001 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a. Government Agencies	MIPR		23052	425		154	Qtrly	80	Qtrly	Cont	23711	Cont
Subtotal Test and Evaluation:			23052	425		154		80			23711	

IV. Management Services: None

Project Total Cost:			720119	29055		33274		38619			821067	
---------------------	--	--	--------	-------	--	-------	--	-------	--	--	--------	--

UNCLASSIFIED

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R-2A Exhibit)	DATE February 2000
--	------------------------------

BUDGET ACTIVITY 5 - Engineering and Manufacturing Development	PE NUMBER AND TITLE 0604223A Comanche	PROJECT D2LT
--	--	-------------------------------

COST (In Thousands)	FY1999 Actual	FY 2000 Estimate	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	FY2004 Estimate	FY2005 Estimate	Cost to Complete	Total Cost
D2LT Comanche Operational Test	0	49	19	716	5942	1169	4798	Continuing	Continuing

A. Mission Description and 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, Electro Optical Sensor System (EOSS) Users Survey 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 1999 Accomplishments: Project not funded in FY 1999

FY 2000 Planned Program:

- 29 Independent evaluation at contractor test facility in support of LUT
 - 9 Support Comanche Portable Cockpit for Customer Test I
 - 10 Independent evaluation assessment of Mission Equipment Package (MEP) subcomponents at contractor sites
 - 1 Small Business Innovation Research (SBIR) program
- Total 49

FY 2001 Planned Program:

- 19 Independent evaluation at contractor test facility in support of LUT
- Total 19

B. Other Program Funding Summary: There are no other related RDT&E or other appropriation efforts.

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

D. Schedule Profile	FY 2000	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005
Prepare for Customer Test I	2Q					
Conduct Customer Test I	3Q					
Conduct independent evaluation at contractor test facility supporting LUT	1-4Q	1-4Q	1-4Q	1-4Q	1-4Q	

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R-2A Exhibit)	DATE February 2000
--	------------------------------

BUDGET ACTIVITY 5 - Engineering and Manufacturing Development	PE NUMBER AND TITLE 0604223A Comanche	PROJECT D2LT
---	---	------------------------

<u>D. Schedule Profile</u>	<u>FY 2000</u>	<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>
Prepare for LUT			4Q	1-4Q	1-2Q	
Prepare for EOSS Users Survey			4Q	1-2Q		
Conduct EOSS Users Survey				3Q		
Prepare for FDTE II				2-3Q		
Conduct FDTE II				4Q		
Conduct LUT						3Q
Prepare for FDTE III					4Q	1Q
Conduct FDTE III						2-3Q
Prepare for FDTE IV and ARTEP						3-4Q
Prepare for IOT&E						3-4Q

UNCLASSIFIED

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R-2A Exhibit)								DATE February 2000	
BUDGET ACTIVITY 5 - Engineering and Manufacturing Development				PE NUMBER AND TITLE 0604223A Comanche				PROJECT D327	
COST (In Thousands)	FY1999 Actual	FY 2000 Estimate	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	FY2004 Estimate	FY2005 Estimate	Cost to Complete	Total Cost
D327 Comanche	323162	429801	575403	709340	684278	719836	391978	Continuing	Continuing
<p>A. <u>Mission Description and Justification:</u> 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; 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.</p> <p>FY 1999 Accomplishments:</p> <ul style="list-style-type: none"> • 112025 Continued Mission Equipment Package (MEP) development • 141648 Continued PPP engineering development • 66680 Continued development testing and flight test program for prototype #1 and conduct first flight of prototype #2 • 2809 Continued to update prototypes #1 and #2 <p>Total 323162</p> <p>FY 2000 Planned Program:</p> <ul style="list-style-type: none"> • 156496 Continue MEP development • 178376 Continue PPP engineering development • 73890 Continue development testing and flight test program for prototypes #1 and #2 • 3764 Continue to update prototypes #1 and #2 • 5850 Material procurement for upgrades to support aircraft #1 and #2 • 11425 Small Business Innovation Research/Small Business Technology Transfer (SBIR/STTR) programs <p>Total 429801</p> <p>FY 2001 Planned Program:</p> <ul style="list-style-type: none"> • 261599 Continue MEP development • 181211 Continue PPP engineering development • 108470 Continue development testing and update of prototypes # 1 and 2 to support flight test • 24123 Begin material procurement/manufacture of thirteen PPP aircraft (test articles), five development test, eight operational test aircraft <p>Total 575403</p>									
Project D327			Page 7 of 10 Pages				Exhibit R-2A (PE 0604223A)		

UNCLASSIFIED

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R-2A Exhibit)	DATE February 2000
--	------------------------------

BUDGET ACTIVITY 5 - Engineering and Manufacturing Development	PE NUMBER AND TITLE 0604223A Comanche	PROJECT D327
--	--	-------------------------------

B. <u>Other Program Funding Summary</u>	<u>FY 1999</u>	<u>FY 2000</u>	<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>	<u>Total Cost</u>
APA								
A08300 Comanche					5336	181225	960069	Cont

C. Acquisition Strategy: Continue work with current contractor leading to Engineering and Manufacturing Development and production.

D. <u>Schedule Profile</u>	<u>FY 1999</u>	<u>FY 2000</u>	<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>
Continue MEP development	1-4Q						
Continue PPP Program engineering development	1-4Q						
Continue development testing / update of prototypes 1 & 2 to support flight test	1-4Q						
Conduct first flight of prototype #2	2Q						
Material procurement for upgrades to acft #1 & #2		1-4Q					
Begin material procurement/manufacture of PPP aircraft			1-4Q				
Continue manufacturing of PPP Program aircraft				1-4Q	1-4Q	1-4Q	1-2Q
Conduct development testing and flight testing of acft #3 thru 6						3-4Q	1-4Q
Complete manufacturing of PPP Program aircraft							2Q
Conduct development testing and flight testing of acft #3 thru 15							1-4Q

UNCLASSIFIED

ARMY RDT&E COST ANALYSIS (R-3)

DATE
February 2000

BUDGET ACTIVITY
5 - Engineering and Manufacturing Development

PE NUMBER AND TITLE
0604223A Comanche

PROJECT
D327

I. Product Development	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 1999 Cost	FY 1999 Award Date	FY 2000 Cost	FY 2000 Award Date	FY 2001 Cost	FY 2001 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a. DAAJ09-91-C-A004	C/CPIF	Boeing Sikorsky, PA	2401054	293157	Oct 98	394446	Oct 99	536903	Oct 00	Cont	3625560	Cont
b. DAAJ09-87-D-A022	C/FFP	Veridian, VA	50180	5711	Jan 99	6052	Jan 00	6400	Jan 01	Cont	68343	Cont
c. Product Development (Other Contracts)	C/T&M			126	Nov 98	200	Nov 99	300	Nov 00	Cont	626	Cont
d. Completed Contracts			370288								370288	370288
e. Gov't Agencies	MIPR			1067		900		1200			3167	
Subtotal Product Development:			2821522	300061		401598		544803			4067984	
II. Support Costs	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 1999 Cost	FY 1999 Award Date	FY 2000 Cost	FY 2000 Award Date	FY 2001 Cost	FY 2001 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a. Other Contracts	C/T&M		25470	4798		5995		6300		Cont	42563	Cont
b. Completed Contracts	C/FFP		15556								15556	15556
c. Gov't Agencies	MIPR		104076	7591		12432	Qtrly	12200	Qtrly	Cont	136299	Cont
Subtotal Support Costs:			145102	12389		18427		18500			194418	
III. Test and Evaluation	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 1999 Cost	FY 1999 Award Date	FY 2000 Cost	FY 2000 Award Date	FY 2001 Cost	FY 2001 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a. Government Agencies	MIPR		22647	1961	Qtrly	1332	Qtrly	1500	Qtrly	Cont	27440	Cont
Subtotal Test and Evaluation:			22647	1961		1332		1500			27440	
IV. Management Services	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 1999 Cost	FY 1999 Award Date	FY 2000 Cost	FY 2000 Award Date	FY 2001 Cost	FY 2001 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a. DAAJ09-96-D-0028	C/T&M	DRC, Massachusetts	2667	1273	Jan 99	932	Jan 00	1100	Jan 01	Cont	5972	Cont
b. Other Contracts	C/T&M		323	284	Dec 98	375	Dec 99	400	Dec 00	Cont	1382	Cont
c. PMO/Gov't Agencies	MIPR			7194	Monthly	7137	Oct 99	9100	Oct 00	Cont	23431	Cont
Subtotal Management Services:			2990	8751		8444		10600			30785	

UNCLASSIFIED

ARMY RDT&E COST ANALYSIS (R-3)	DATE February 2000
---	------------------------------

BUDGET ACTIVITY 5 - Engineering and Manufacturing Development	PE NUMBER AND TITLE 0604223A Comanche	PROJECT D327
---	---	------------------------

			Total PYs Cost	<u>FY 1999</u> Cost		<u>FY 2000</u> Cost		<u>FY 2001</u> Cost		Total Cost
Project Total Cost:			2992261	323162		429801		575403		4320627

--	--	--	--	--	--	--	--	--	--	--