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DEPARTMENT OF THE ARMY

JUSTIFICATION OF ESTIMATES FOR FISCAL YEAR 1987

SUBMITTED TO CONGRESS

FEBRUARY 1986



AIRCRAFT

PROCUREMENT

PROGRAMS

AIRCRAFT

MISSILES

WEAPONS & TRACKED COMBAT VEHICLES

AMMUNITION

OTHER

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20. ABSTRACT (Continue on reverse side if necessary and identify by block number) In justification of programs requested, this document, in separate volume for each of the five Procurement Appropriations, and one separate volume for Construction Programs, provides backup data for the Army Budget submission for FY 1987. Included are Summaries of Requirements, Program and Financing Statements and Selected Data Sheets. (These volumes are unclassified).		

DEPARTMENT OF THE ARMY
AIRCRAFT PROCUREMENT, ARMY

JUSTIFICATION OF ESTIMATES FOR FISCAL YEARS 1987, 1988

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1-1 February 1986

AIRCRAFT PROCUREMENT, ARMY

Section 1

Budget Appendix Extract

Appropriation Language

Program and Financing Schedule

Object Classification Schedule

1-1 February 1986

APPROPRIATION LANGUAGE

For construction, procurement, production, modification, and modernization of aircraft or equipment, including ordnance, ground handling equipment, spare parts, and accessories therefor; specialized equipment and training devices; expansion of public and private plants, including the land necessary therefor, for the foregoing purposes, and such lands and interests therein, may be acquired, and construction prosecuted thereon prior to approval of title; and procurement and installation of equipment, appliances, and machine tools in public and private plants; reserve plant and Government and contractor-owned equipment layaway; and other expenses necessary for the foregoing purposes; ~~(\$3,524,200,000)~~ \$3,264,700,000 to remain available for obligation until September 30, ~~(1988)~~ 1989.

1-2 February 1986

Aircraft Procurement, Army
Program and Financing (in thousands of dollars) FISCAL YEAR 1983

04 Feb 86

Identification code	21-2031-0-1-051	Budget plan (amounts for PROCUREMENT actions programmed)			Obligations	
		1985 actual	1986 est.	1987 est.	1985 actual	1986 est.
Program by activities:						
Direct program:						
00.0101	Aircraft				53,802	
00.0201	Modification of aircraft				67,997	
00.0301	Spares and repair parts				66,129	
00.0401	Support equipment and facilities				11,679	
00.9101	Total direct program				199,607	
01.0101	Reimbursable program				25,268	
10.0001	Total				224,875	
Financing:						
Offsetting collections from:						
11.0001	Federal funds(-)				4,427	
13.0001	Trust funds(-)				4,975	
17.0001	Recovery of prior year obligations				-35,937	
21.4002	Unobligated balance available, start of year:				-219,818	
21.4007	For completion of prior year budget plans					
22.4001	Reprogramming from/to prior year budget plan	-21,478			11,300	
25.0001	Unobligated balance transferred to other acc	11,300			10,178	
	Unobligated balance lapsing	10,178				
39.0001	Budget authority					

1-3 February 1986

Aircraft Procurement, Army
Program and Financing (in Thousands of dollars) FISCAL YEAR 1984 04 Feb 86

Identification code	21-2031-0-1-051	Budget Plan (amounts for PROCUREMENT actions programed)			Obligations	
		1985 actual	1986 est.	1987 est.	1986 est.	1987 est.
Program by activities:						
Direct program:						
00.0101	Aircraft				124,971	76,675
00.0201	Modification of aircraft				83,175	58,598
00.0301	Spares and repair parts				107,639	52,680
00.0401	Support equipment and facilities				73,760	59,722
00.9101	Total direct program				389,545	247,675
01.0101	Reimbursable program				28,577	89
10.0001	Total				418,122	247,764
Financing:						
Offsetting collections from:						
11.0001	Federal funds(-)				5,614	11
13.0001	Trust funds(-)				3,323	
14.0001	Non-federal sources(-)				-24	
17.0001	Recovery of prior year obligations				-37,980	
21.4002	Unobligated balance available, start of year:				-600,730	-247,775
21.4007	For completion of prior year budget plans					
22.4001	Reprogramming from/to prior year budget plan	36,100			-36,100	
22.4001	Unobligated balance transferred from other a	-36,100				
24.4002	Unobligated balance available, end of year:				247,775	
25.0001	For completion of prior year budget plans	600			600	
25.0001	Unobligated balance lapsing					
50.0001	Budget authority (Reappropriation)	600			600	

Aircraft Procurement, Army
Program and Financing (in Thousands of dollars) FISCAL YEAR 1985

04 Feb 86

Identification code	21-2031-0-1-051	Budget Plan (amounts for PROCUREMENT actions programmed)			Obligations		
		1985 actual	1986 est.	1987 est.	1985 actual	1986 est.	1987 est.
Program by activities:							
Direct program:							
00.0101	Aircraft	2,040,853			1,893,757	105,244	41,852
00.0201	Modification of aircraft	857,890			554,547	203,166	100,177
00.0301	Spares and repair parts	677,657			510,365	94,856	72,436
00.0401	Support equipment and facilities	277,400			222,108	50,950	4,342
00.9101	Total direct program	3,853,800			3,180,777	454,216	218,807
01.0101	Reimbursable program	49,518			42,753	6,766	
10.0001	Total	3,903,318			3,223,530	460,982	218,807
Financing:							
Offsetting collections from:							
11.0001	Federal funds(-)	-35,595			-35,595		
13.0001	Trust funds(-)	-13,887	105		-13,887	105	
14.0001	Non-Federal sources(-)	-141			-141		
21.4002	Unobligated balance available, start of year:						
21.4003	For completion of prior year budget plans						
21.4007	Available to finance new budget plans						
22.4001	Reprogramming from/to prior year budget plan	-33,695	-120,900			-646,094	-218,807
22.4001	Unobligated balance transferred to other accounts		33,695			-120,900	
24.4002	Unobligated balance available, end of year:		87,100			87,100	
24.4003	For completion of prior year budget plans	120,900			646,094	218,807	
24.4003	Available to finance subsequent year budget				120,900		
40.0001	Budget authority: (Appropriation)	3,940,900			3,940,900		

1-5 February 1986

Aircraft Procurement, Army
Program and Financing (in Thousands of dollars) FISCAL YEAR 1986

04 Feb 86

Identification code	21-2031-0-1-051	Budget Plan (amounts for PROCUREMENT actions programed)			Obligations		
		1985 actual	1986 est.	1987 est.	1985 actual	1986 est.	1987 est.
Program by activities:							
Direct program:							
00.0101	Aircraft		1,694,000		1,342,258	125,827	
00.0201	Modification of aircraft		726,100		569,495	152,650	
00.0301	Spares and repair parts		814,300		676,101	109,470	
00.0401	Support equipment and facilities		289,800		250,826	30,220	
00.9101	Total direct program		3,524,200		2,838,680	418,167	
01.0101	Reimbursable program		83,800		83,800		
10.0001	Total		3,608,000		2,922,480	418,167	
Financing:							
Offsetting collections from:							
11.0001	Federal funds(-)		-38,200		-38,200		
13.0001	Trust funds(-)		-45,600		-45,600		
21.4002	Unobligated balance available, start of year: For completion of prior year budget plans					-685,520	
24.4002	Unobligated balance available, end of year: For completion of prior year budget plans				685,520	267,353	
40.0001	Budget authority (Appropriation)		3,524,200		3,524,200		

1-6 February 1986

Aircraft Procurement, Army
Program and Financing (in Thousands of dollars) FISCAL YEAR 1987

04 Feb 86

Identification code	21-2031-0-1-051	Budget plan (amounts for PROCUREMENT actions programed)			Obligations		
		1985 actual	1986 est.	1987 est.	1985 actual	1986 est.	1987 est.
Program by activities:							
Direct program:							
00.0101	Aircraft		1,730,700			1,220,534	
00.0201	Modification of aircraft		662,600			618,350	
00.0301	Spares and repair parts		710,500			640,843	
00.0401	Support equipment and facilities		160,900			150,316	
00.9101	Total direct program		3,264,700			2,630,043	
01.0101	Reimbursable program		75,600			75,600	
10.0001	Total		3,340,300			2,705,643	
Financing:							
Offsetting collections from:							
11.0001	Federal funds(-)		-34,200			-34,200	
13.0001	Trust funds(-)		-41,400			-41,400	
24.4002	Unobligated balance available, end of year:						
	For completion of prior year budget plans					634,657	
40.0001	Budget authority (Appropriation)		3,264,700			3,264,700	

1-7 February 1986

Aircraft Procurement, Army
Program and Financing (in thousands of dollars) SUMMARY

04 Feb 86

Identification code	21-2031-0-1-051	Budget Plan (amounts for PROCUREMENT actions programed)			Obligations		
		1985 actual	1986 est.	1987 est.	1985 actual	1986 est.	1987 est.
Program by activities:							
Direct program:							
00.0101	Aircraft	2,040,853	1,694,000	1,730,700	2,072,530	1,524,177	1,388,213
00.0201	Modification of aircraft	857,890	726,100	662,600	705,719	831,259	871,177
00.0301	Spares and repair parts	677,657	814,300	710,500	684,133	823,637	822,749
00.0401	Support equipment and facilities	277,400	289,800	160,900	307,547	361,498	184,878
00.9101	Total direct program	3,853,800	3,524,200	3,264,700	3,769,929	3,540,571	3,267,017
01.0101	Reimbursable program	49,518	83,800	75,600	96,598	90,655	75,600
10.0001	Total	3,903,318	3,608,000	3,340,300	3,866,527	3,631,226	3,342,617
Financing:							
Offsetting collections from:							
11.0001	Federal funds(-)	-35,595	-38,200	-34,200	-25,554	-38,200	-34,200
13.0001	Trust funds(-)	-13,887	-45,495	-41,400	-5,589	-45,484	-41,400
14.0001	Non Federal sources(-)	-141			-165		
17.0001	Recovery of prior year obligations				-73,917		
21.4002	Unobligated balance available, start of year:						
21.4003	for completion of prior year budget plans				-820,548	-893,869	-904,327
21.4007	Available to finance new budget plans	-19,073	33,695			-120,900	
22.4001	Reprogramming from/to prior year budget plans	-24,800	87,100		-24,800	87,100	
24.4002	Unobligated balance transferred to other acc						
24.4003	Unobligated balance available, end of year:						
25.0001	for completion of prior year budget plans	120,900			893,869	904,327	902,010
	Available to finance subsequent year budget	10,778			120,900		
	Unobligated balance lapsing				10,778		
39.0001	Budget authority	3,941,500	3,524,200	3,264,700	3,941,500	3,524,200	3,264,700
Budget authority:							
40.0001	Appropriation	3,940,900	3,524,200	3,264,700	3,940,900	3,524,200	3,264,700
50.0001	Reappropriation	600			600		
Relation of obligations to outlays:							
71.0001	Obligations incurred, net				3,835,219	3,547,542	3,267,017
72.4001	Obligated balance, start of year				3,463,528	4,512,256	5,075,745
74.4001	Obligated balance, end of year				-4,512,256	-5,075,745	-5,346,446
77.0001	Adjustments in expired accounts				-7,370		
78.0001	Adjustments in unexpired accounts				-73,917		
90.0001	Outlays				2,705,203	2,984,053	2,996,316

1-8 February 1986

Aircraft Procurement, Army				04 Feb 86
Object Classification (in thousands of dollars)				SUMMARY
Identification code	21-2031-0-1-051	1985 actual	1986 est.	1987 est.
Direct obligations:				
Other services:				
125.004		286,270	305,637	311,436
126.001	Other	318,078	386,074	348,345
131.001	Supplies and materials	3,165,581	2,848,860	2,607,236
	Equipment			
199.001	Total Direct obligations	3,769,929	3,540,571	3,267,017
Reimbursable obligations:				
Other services:				
225.004		3,848	46,236	8,692
226.001	Other	4,275	4,894	7,353
231.001	Supplies and materials	88,475	39,525	59,555
	Equipment			
299.001	Total Reimbursable obligations	96,598	90,655	75,600
999.901	Total obligations	3,866,527	3,631,226	3,342,617

1-9 February 1986

Aircraft Procurement, Army
(Reduction Pursuant to Public Law 99-177)
Program and Financing (in thousands of dollars) FISCAL YEAR 1984

04 Feb 86

Identification code	21-2031-6-1-051	Budget plan (amounts for PROCUREMENT actions programmed)			Obligations	
		1985 actual	1986 est.	1987 est.	1985 actual	1986 est. 1987 est.
Program by activities:						
10.0001	Total					-12,136
Financing:						
Unobligated balance available, start of year:						
21.4007	Reprogramming from/to prior year budget plan		-12,136			
23.4001	Unobligated balance reduction: Appropriation		12,136			12,136
39.0001	Budget authority					

1-10 February 1986

Aircraft Procurement, Army
(Reduction Pursuant to Public Law 99-177)
Program and Financing (in thousands of dollars) FISCAL YEAR 1985

04 Feb 86

Identification code	21-2031-6-1-051	Budget Plan (amounts for PROCUREMENT actions programmed)				Obligations	
		1985 actual	1986 est.	1987 est.	1985 actual	1986 est.	1987 est.
Program by activities:							
Direct program:							
00.0101	Aircraft						
00.2001	Undistributed	-31,469				-22,343	-9,126
10.0001	Total	-31,469				-22,343	-9,126
Financing:							
Unobligated balance available, start of year:							
21.4002	For completion of prior year budget plans						9,126
21.4007	Reprogramming from/to prior year budget plan	31,469	-31,469				
23.4001	Unobligated balance reduction: Appropriation		31,469			31,469	
24.4002	Unobligated balance available, end of year:						
	For completion of prior year budget plans					-9,126	
39.0001	Budget authority						

1-11 February 1986

Aircraft Procurement, Army
(Reduction Pursuant to Public Law 99-177)
Program and Financing (in Thousands of dollars) FISCAL YEAR 1986

04 Feb 86

Budget Plan (amounts for PROCUREMENT
actions programmed)

Identification code	21-2031-6-1-051	1985 actual	1986 est.	1987 est.	1985 actual	1986 est.	1987 est.	Obligations
Program by activities:								
Direct program:								
00.0101	Aircraft		-172,686			-139,876		-20,014
00.2001	Undistributed							
10.0001	Total		-172,686			-139,876		-20,014
Financing:								
Unobligated balance at start of year:								
21.4002	For completion of prior year budget plans							32,810
24.4002	Unobligated balance available, end of year:							
	For completion of prior year budget plans					-32,810		-12,796
40.0001	Budget authority (Appropriation)		-172,686			-172,686		

1-12 February 1986

Aircraft Procurement, Army
(Reduction Pursuant to Public Law 99-177)
Program and Financing (in Thousands of dollars) SUMMARY

04 Feb 86

Identification code	21-2031-6-1-051	Budget Plan (amounts for PROCUREMENT actions programmed)			Obligations		
		1985 actual	1986 est.	1987 est.	1985 actual	1986 est.	1987 est.
Program by activities:							
Direct program:							
00.0101	Aircraft	-31,469	-172,686		-174,355	-29,140	
00.2001	Undistributed						
10.0001	Total	-31,469	-172,686		-174,355	-29,140	
Financing:							
Unobligated balance available, start of year:							
21.4002	For completion of prior year budget plans						
21.4007	Reprogramming from/to prior year budget plan	31,469	-43,605				41,936
23.4001	Unobligated balance reduction: Appropriation		43,605		43,605		
Unobligated balance available, end of year:							
24.4002	For completion of prior year budget plans				-41,936	-12,796	
40.0001	Budget authority (Appropriation)		-172,686		-172,686		
Relation of obligations to outlays:							
71.0001	Obligations incurred, net				-174,355	-29,140	
72.4001	Obligated balance, start of year					-141,902	
74.4001	Obligated balance, end of year					141,902	84,526
90.0001	Outlays				-32,453	-86,516	

1-13 February 1986

Aircraft Procurement, Army

(Reduction Pursuant to Public Law 99-177)

Object Classification (in Thousands of dollars) SUMMARY

04 Feb 86

Identification code	21-2031-6-1-051	1985 actual	1986 est.	1987 est.
Direct obligations:				
192.001	Undistributed		-174,355	-29,140
199.001	Total Direct obligations		-174,355	-29,140
999.901	Total obligations		-174,355	-29,140

1-14 February 1986

AIRCRAFT PROCUREMENT, ARMY

Section 2

Budget Activity Justifications

Activity 1 - Aircraft

Activity 2 - Modification

Activity 3 - Spares and Repair Parts

Activity 4 - Support Equipment and Facilities

1-15 February 1986

Department of the Army Annual Budget Estimates JUSTIFICATION	Appropriation Aircraft Procurement, Army		FY 1987	
			Budget	
	(Thousands of Dollars)			
	Actual	Estimate	Estimate	Estimate
Program or Budget Project Account				
Budget Program - Activity 1, Aircraft.				
	FY 1985	FY 1986	FY 1987	FY 1988
Direct Obligation or Direct Budget Plan	2,040,853	1,694,000	1,730,700	1,494,500
Direct Obligation				

Section 1 - PURPOSE AND SCOPE

Provides for procurement and manufacture of airplanes, helicopters, and associated aircraft armament and avionics equipment.

Section 2 - JUSTIFICATION OF FUNDS REQUESTED

	(\$ in Thousands)
FY 1987	FY 1988
-	\$72,100

RC-12D Reconnaissance Airplane - (P-1 Line Item 3).

In FY 1988, \$72.1 million is requested to procure six RC-12K reconnaissance aircraft and mission equipment. This procurement will bring to full strength (12 aircraft), the first GUARDRAIL Common Sensor System. Procurement of the remaining three Corps Signal Intelligence (SIGINT) GUARDRAIL Common Sensor support systems and equipment occurs in FY 1989-1991. These systems provide for full SIGINT support to include Electronic Intelligence capabilities for priority U.S. Army Corps.

1-16 February 1986

	(\$ in Thousands)
FY 1987	<u>FY 1988</u>
\$151,900	-

EH-60A QUICK FIX Electronic Helicopter (Multiyear Procurement) - (P-1 Line Items 5 and 6).

The FY 1987 request includes \$135.0 million for the procurement of 18 EH-60A QUICK FIX helicopters. Additionally, \$16.9 million is requested for advance procurement of long leadtime engine and airframe components required to support the FY 1988 production. QUICK FIX utilizes the BLACK HAWK airframe to deploy on-board Electronic Warfare (EW) equipment designed to identify, locate, listen, and disrupt enemy command and control communications. Funding in FY 1988 will buy the remaining QUICK FIX aircraft and complete the procurement.

	(\$ in Thousands)
FY 1987	<u>FY 1988</u>
\$1,228,400	-

AH-64 Attack Helicopter (APACHE) - (P-1 Line Items 7 and 8).

In FY 1987, \$1,189.3 million is requested for the procurement of 144 AH-64 APACHE attack helicopters. In addition, \$39.1 million is requested for advance procurement of long leadtime items required to support FY 1987 production. The APACHE is a twin-engine, two-place, fully integrated anti-armor weapon system capable of destroying tanks and other armored vehicles under day, night and adverse weather conditions. The aircraft employs the HELLFIRE (laser seeking) anti-tank missile, Hydra 70 rockets, and 30mm gun. Target acquisition is accomplished by the Target Acquisition and Designation Sight (TADS) which enables extremely accurate fires with high first round hit probability. Night navigation is provided by the Pilots Night Vision Sensor (PNVS). The mobility, flexibility, and rapid response of the AH-64 will provide the balance required to help counter the Warsaw Pact threat and allow it to be a key member of the Rapid Deployment Force (RDF). In FY 1988, funding is requested for the procurement of AH-64 APACHE Attack Helicopters.

(\$ in Thousands)	
FY 1987	FY 1988
\$350,400	\$528,000

UH-60A BLACK HAWK (Multiyear Procurement) - (P-1 Line Items 9 and 10).

In FY 1987, \$350.4 million is requested for the procurement of 78 UH-60A BLACK HAWK helicopters. These funds include \$195.0 million for advance procurement of long leadtime items and engines required to support the follow-on multiyear procurement (FY 1988 - 1990) of airframes. The BLACK HAWK will modernize the Army's utility helicopter fleet. It will enhance tactical mobility with increased speed, lifting capacity, range, reliability, availability, maintainability, and survivability at reduced overall operating costs. This utility helicopter is the Army's first true squad carrying helicopter and is powered by two T-700 engines. The Army initiated Multiyear Procurement (MYP) for the BLACK HAWK engine in FY 1983. Multiyear Procurement of the BLACK HAWK engine (FY 1986 - 1988) will save an estimated \$31.2 million during this period. A total of \$528.0 million is requested in FY 1988 for procurement of 85 UH-60A BLACK HAWK helicopters. Included is \$191.4 million for advance procurement of long leadtime engine and airframe components required to support FY 1989 production.

1-18 February 1986

Department of the Army Annual Budget Estimates JUSTIFICATION		Appropriation Aircraft Procurement, Army		FY 1987
Program or Budget Project Account		(Thousands of Dollars)		Budget
Budget Program - Activity 2, Aircraft Modifications.		Actual	Estimate	Estimate
		FY 1985	FY 1986	FY 1987
Direct Obligation or Direct Budget Plan		857,890	726,100	662,600
Direct Obligation				829,500

Section 1 - PURPOSE AND SCOPE

Provides for modification of items and upgrade of equipment procured by the Aircraft Procurement, Army appropriation, including modification kits. Installation costs are not included unless the manufacturer, provides parts and labor under a single contract (excluding normal Government Furnished Equipment (GFE) and this results in an end item reconfigured to a new series designation or new operational capability.

Section 2 - JUSTIFICATION OF FUNDS REQUESTED

	(\$ in Thousands)
FY 1987	FY 1988
\$24,900	\$39,300

OV-1 Surveillance Airplane (MOHAWK) - (P-1 Line Item 11).

The \$24.9 million requested in FY 1987 provides support to the FY 1988 block improvement production schedule by funding publications and provisioning efforts and avionics equipment. These funds also procure hardware for two Safety Product Improvement (stall warning and improved deicing) for the entire fleet. FY 1988 funding begins production (10) of block improved aircraft and procures Aircraft Survivability Equipment (AN/ALQ-136 Radar Jammer, AN/ALQ-162 CW Radar Jammer and AN/ALQ-156 Missile Detector System).

1-19 February 1986

(\$ in Thousands)	
FY 1987	FY 1988
\$2,700	\$5,400

FY-1 Reconnaissance Airplane - (P-1 Line Item 13).

The \$2.7 million requested in FY 1987 is for procurement of modification kits for the continuous wave radar jammer. In FY 1988, \$5.4 million is requested for procurement of continuous wave radar jammers, missile detector system and block improvement.

(\$ in Thousands)	
FY 1987	FY 1988
\$61,000	\$81,000

AH-1S Attack Helicopter (COBRA-TOW) - (P-1 Line Item 14).

A total of \$61.0 million is requested in FY 1987 for a variety of COBRA modification programs. This includes the COBRA Night Program (C-Nite) and the COBRA Fleet Life Extension Program (C-FLEX). Funding will also provide for the Laser Augmented Airborne TOW, Optical Improvements and Safety related improvements. A total of \$81.0 million is requested in FY 1988 for the C-FLEX, C-NITE and the Laser Augmented TOW Optical Improvements.

(\$ in Thousands)	
FY 1987	FY 1988
\$33,400	\$33,000

AH-64 APACHE Modifications - (P-1 Line Item 15).

In FY 1987, \$33.4 million is requested for the procurement of the Airborne Target Handoff System. This system allows the APACHE to communicate with airborne and ground systems in a data burst, secure mode through the aircraft's SINGGARS radio. This allows target information to be passed from scout aircraft or ground designators in a faster, more efficient and error free method so that the APACHE has good target information much more rapidly and in some cases prior to reaching the actual target area. This greatly enhances the APACHES combat effectiveness and survivability. The FY 1988, \$33.0 million continues the procurement of these systems for the aircraft installation.

1-20 February 1986

(\$ in Thousands)
 FY 1987
 FY 1988
\$267,000 \$243,100

CH-47 Cargo Helicopter (Multiyear Procurement) - (P-1 Line Items 16 and 17)

A total of \$267.0 million is requested in FY 1987 for continuation of the CH-47D modernization program and for fleet modifications. The CH-47 Modernization program includes improvements to the current CH-47A, B, C fleet to modernize it to the greatly improved CH-47D configuration. Modifications include new fiberglass rotor blades; new engines; transmission and drive system; modularized hydraulics; electrical system; advanced flight control system; triple hook cargo system and a new auxiliary power unit. These improvements increase the aircraft capability for lift and endurance and extends the useful life of the fleet beyond the year 2000. The features greatly enhance reliability, maintainability, productivity, survivability and safety of the Active Army's only medium-lift cargo helicopter. In FY 1988, \$243.1 million is requested for continuation of the fleet modernization to the improved CH-47D configuration. Funding also permits the continuation of the T-55-L-11D engine conversion to the T-55-L-712 configuration. Advance procurement for FY 1987 and FY 1988 is \$58.6 million and \$69.2 million, respectively. This program is a multiyear procurement beginning in FY 1985 and continuing through FY 1989.

(\$ in Thousands)
 FY 1987
 FY 1988
\$1,300 \$10,300

CH-54 Cargo Helicopter (TARHE) - (P-1 Line Item 18)

A total of \$1.3 million is requested in FY 1987 for modifications to the CH-54 fleet. The program includes product improvements such as avionics/wiring update, new nitrogen sensing cable, improved Auxiliary Power Unit (APU) electric start, and reliability improvements. The CH-54 is the Army's only heavy lift helicopter and is the platform required for over the beach container movement. The entire fleet is assigned to the reserve components. The planned improvements are designed to keep the aircraft operational through the year 2000. The \$10.3 million requested in FY 1988 will permit a much needed avionics/wiring update for this program.

	(\$ in Thousands)
FY 1987	
FY 1988	
\$6,300	\$18,800

UH-1 Utility Helicopter (IROQUOIS) - (P-1 Line Item 21).

A total of \$6.3 million is requested in FY 1987 to continue the hub spring modification to reduce the possibility of mast bumping. The \$18.8 million requested in FY 1988 will fund the replacement of the UH-1 aircraft fleet avionics, as the UH-1 has reached an age where most of the avionics cannot be logistically supported and are no longer in production.

	(\$ in Thousands)
FY 1987	
FY 1988	
\$7,700	\$18,800

UH-60A (BLACK HAWK) Mods - (P-1 Line Item 22).

A total of \$7.7 and \$18.8 million is requested in FY 1987 and FY 1988, respectively, to continue retrofitting fielded UH-60 BLACK HAWKS with provisions to accommodate the External Stores Support System (ESSS). ESSS provides the Army with a self-deployment and extended range capability in support of the Rapid Deployment Force mission. Other improvements include the installation of the Hover Infrared Suppressor System, and Wire Strike Protection System, SINGGARS/Remote 186, SINGGARS Radio and the APU particle separator.

	(\$ in Thousands)
FY 1987	
FY 1988	
\$210,300	\$242,300

Army Helicopter Improvement Program (AHIP) - (P-1 Line Items 23 and 24).

A total of \$210.3 million is requested in FY 1987 to modify 48 OH-58A airframes to the OH-58D (AHIP) configuration. The advance procurement program is \$45.4 million and \$129.1 million in FY 1987 and FY 1988, respectively. Modification of the OH-58A includes the addition of a Mast-Mounted Sight (MMS) to achieve a day, night, adverse weather target acquisition and designation capability, an integrated cockpit with improved communications and navigation equipment, a more powerful engine, redesign of the main transmission and tail rotor drive train, and the installation of a composite, four bladed main rotor system and composite tail rotor. The AHIP will provide commanders with a significantly improved observation helicopter to conduct command and control, reconnaissance, surveillance, security and target acquisition/designation functions under day, night, and adverse weather conditions. In FY 1988, \$242.3 million is requested to exercise the fifth production contract to modify 32 OH-58A airframes to the OH-58D (AHIP) configuration, and modification of 81 OH-58A airframes in FY 1989.

1-22 February 1986

(\$ in Thousands)	
FY 1987	FY 1988
\$28,800	\$41,500

Air-to-Air Stinger - (P-1 Line Item 25).

In FY 1987, \$28.8 million is requested for the procurement of 74 air-to-air systems. These funds include \$8.1 million for production facilitization. The air-launched Stinger provides a critically needed helicopter air-to-air capability utilizing the unmodified Man Portable Air Defense System (MANPADS) Stinger. This program will develop, qualify and procure a generic two-round launcher, interface electronics package, Missile Sight System (MSS), system controls, and miscellaneous installation hardware for 2545 OH-58/AH-64/AH-1S/UH-60 helicopters. The lack of an air-to-air capability for Army helicopters remains the highest material deficiency priority in the Army Aviation Mission Area Analysis. The urgency of this program is a direct result of the known and improving air-to-air Soviet threat specifically targeting U.S. helicopters. The absence of an air-to-air capability will ultimately reduce our helicopter anti-tank capability. A total of \$41.5 million is requested in FY 1988 for procurement of 240 air-to-air systems. This funding complements the intended ramp-up to a production rate of 720 systems per year.

(\$ in Thousands)	
FY 1987	FY 1988
\$100	\$1,900

Airborne Avionics - (P-1 Line Item 26).

The \$.1 million requested in FY 1987 will provide airborne avionics modifications and the initiation of upgrades for the tactical approach radar. \$1.9 million in FY 1988 will continue these product improvement programs.

(\$ in Thousands)	
FY 1987	FY 1988
\$ 3,500	\$100

Aircraft Survivability Equipment (ASE) Close Combat - (P-1 Line Item 27).

In 1987, \$3.5 million funds the kits necessary to adapt all of the 3054 IP-1150 cockpit displays in the Army fleet to interface with the new AN/APR-39A Radar Warning Receiver (RWR). The new AN/APR-39A RWR is a digital, alphanumeric, voice warning system with extended frequency coverage. Resources in FY 1988 provide low level program continuance.

1-23 February 1986

	(\$ in Thousands)
FY 1987	FY 1988
\$100	\$2,600

Modifications less than \$Two Million - (P-1 Line Item 28).

The \$.1 million requested in FY 1987 and \$2.6 million in FY 1987 for several minor modifications.

	(\$ in Thousands)
FY 1987	FY 1988
\$12,000	\$24,400

Aircraft 9WW - (P-1 Line Item 29).

A total of \$12.0 million is requested in FY 1987 and \$24.4 million in FY 1988 for specialized aviation of a classified nature.

	(\$ in Thousands)
FY 1987	FY 1988
\$ 3,500	\$67,000

Special Operations Forces (SOF) Modifications - (P-1 Line Item 30).

A total of \$3.5 million for FY 1987 will be used to procure initial long lead items for use on production of aircraft. The \$67.0 million requested for FY 1988 will be used to procure components, material and equipment needed to initiate modification of Special Operations Forces aircraft and to acquire support equipment. The Special Operations Forces (SOF) Aircraft Modifications program provides for necessary modifications to upgrade UH-60A and CH-47D helicopters to configurations necessary to conduct precision navigation, extended range operations at tactical altitudes through unfamiliar mountainous terrain in support of special operations forces.

1-24 February 1986

Department of the Army Annual Budget Estimates JUSTIFICATION	Appropriation Aircraft Procurement, Army		FY 1987	
			Budget	
			(Thousands of Dollars)	
	Actual	Estimate	Estimate	Estimate
Program or Budget Project Account				
Budget Program - Activity 3, Spares and Repair Parts	FY 1985	FY 1986	FY 1987	FY 1988
Direct Obligation or Direct Budget Plan	677,657	814,300	710,500	786,900
Direct Obligation				

Section 1 - PURPOSE AND SCOPE

Provides for procurement of depot repairable spares and repair parts including provisioning (initial issue), replenishment, mobilization reserve, and avionics spares.

Section 2 - JUSTIFICATION OF FUNDS REQUESTED

(\$ in Thousands)

FY 1987	FY 1988
710,500	786,900

Spares and Repair Parts - (P-1 Line Item 31).

Initial Spares: A total of \$213.6 million is requested in FY 1987 and \$219.1 million in FY 1988 to procure spares and repair parts in support of initial fielding of new or modified systems. These funds also support the procurement of aircraft engines and engine modules over the life cycle of the aircraft. Spares are an integral part of the development of any aircraft system (new procurement or modification). Initial spares are ordered to support the major item delivery and fielding schedule to preclude grounding the system for lack of spare parts. Aircraft end items supported in FY 1987 are:

		(Dollars in Millions)	
AH-64	\$113.6	OV-1	\$ 3.0
UH-60A	4.6	AH-1S	6.5
EH-60A	19.3	CH-47	19.7
RC-12D	5.1	AH1P	36.4
		Ground Support Equipment	\$.8
		Night Vision Goggles	2.6
		ASE & Avionics	1.2
		SINCGARS	.8

1-25 February 1986

Replenishment Spares: A total of \$496.9 million is requested in FY 1987 and \$567.8 million in FY 1988. The peacetime replenishment spares support the Army's flying hour program, depot and pipeline requirements for the life of the system. War reserve spares provide initial combat surge support until resupply can be established.

1-26 February 1986

Department of the Army Annual Budget Estimates JUSTIFICATION		Appropriation Aircraft Procurement, Army		FY 1987
Program or Budget Project Account		(Thousands of Dollars)		Budget
Budget Program - Activity 4, Support Equipment and Facilities		Actual	Estimate	Estimate
Direct Obligation or Direct Budget Plan		FY 1985	FY 1986	FY 1987
Direct Obligation		277,400	289,800	160,900
				FY 1988
				299,900

Section 1 - PURPOSE AND SCOPE

Provides for avionics support equipment including communications, position/navigation, survivability equipment and aviator night vision goggles; for common ground equipment including tool sets, shop sets and components thereof, ground handling/servicing equipment, special test and diagnostic equipment, fixed base airfield support equipment (air traffic control), and aviation life support equipment (ALSE); for tactical air traffic control systems; for flight simulators and training devices; for industrial facilities including provisions for industrial facilities and depot maintenance plant equipment; and for war consumables including lightweight rocket launchers.

Section 2 - JUSTIFICATION OF FUNDS REQUESTED

	(\$ in Thousands)
FY 1987	FY 1988
\$11,600	\$88,500

Aircraft Survivability Equipment (ASE) - (P-1 Line Item 32).

In FY 1987, \$11.6 million is requested for procurement of 64 AN/ALQ-156 missile detector systems for the EH-1 Electronic Helicopter, OV-1D Surveillance Airplane and RC-12D Reconnaissance Airplane and will conclude the second year of an AN/APR-39A(V)1 radar warning receiver contract. In FY 1988 funds are required to initiate a two year multiyear program to equip the entire Special Electronic Mission Aircraft (SEMA) fleet with the AN/ALQ-136 radar jammer. In addition, funds in FY 1988 procure 230 AN/ALQ-144A advanced jammers for the AH-1S Attack Helicopter fleet and 79 AN/ALQ-162 continuous wave radar jammers for the SEMA fleet.

1-27 February 1986

(\$ in Thousands)	
FY 1987	FY 1988
<u>\$57,900</u>	<u>\$80,400</u>

Avionics Support Equipment - (P-1 Line Item 33).

The FY 1987 request for \$57.9 million is allocated as follows: \$26.9 million for communications equipment, \$10.5 million for navigation equipment, and \$20.5 million for aviation night vision goggles. The FY 1988 program will continue the procurement of these items.

(\$ in Thousands)	
FY 1987	FY 1988
<u>-</u>	<u>\$2,300</u>

Heliborne Command and Control (C2) Console - (P-1 Line Item 34).

In FY 1988, the Army is beginning a program to outfit 54 UH-60 BLACK HAWK aircraft with command and control communications console equipment which will provide Brigade/Division unit commanders with an integrated command and control capability over deployed units. In FY 1988, \$2.3 million is requested to install standard racks of communications equipment in six BLACK HAWK aircraft.

(\$ in Thousands)	
FY 1987	FY 1988
<u>-</u>	<u>\$7,600</u>

Microwave Landing System (MLS) Avionics - (P-1 Line Item 35).

In FY 1988, the Army will begin an effort, directed by the Department of Defense, to fix critical shortfalls in aviation electronics (avionics) and begin a program to bring fielded aircraft to current, approved avionics configurations. The \$7.6 million will begin the purchase of MLS receivers to be installed in Army aircraft configured to MLS ground landing systems throughout the Army.

(\$ in Thousands)	
FY 1987	FY 1988
<u>\$28,400</u>	<u>\$29,700</u>

Common Ground Equipment - (P-1 Line Item 36).

A total of \$28.4 million is requested in FY 1987 and \$29.7 million in FY 1988 for procurement of Sets, Kits, and Outfits; Aviation Ground Support Equipment; Aviation Life Support Equipment, Airfield Support Equipment; Survival Radio Equipment and individual items costing less than \$2.0 million. Sets, Kits, and Outfits are required to fill shortages, replace obsolete equipment and to continue implementation of the three level maintenance concept. Aviation Ground Support Equipment provides for the acquisition of aircraft ground power units, vibrex analyzers, test equipment. Other Airfield Support Equipment is required to maintain the fixed base air traffic control capability at Army airfields/heliports by replacing aging or obsolete equipment. Items less than \$2.0 million contains a grouping of test equipment for the maintenance of avionics Aviation Life Support Equipment includes items oriented on improving crew member survivability in an NBC environment or aircraft crash.

(\$ in Thousands)	
FY 1987	FY 1988
<u>\$4,800</u>	<u>\$2,900</u>

Air Traffic Control - (P-1 Line Item 37).

A total of \$4.8 million and \$2.9 million is requested in FY 1987 and 1988, respectively, to continue the procurement of tactical Air Traffic Control (ATC) systems to fill critical shortages of equipment in both Active and Army National Guard units. The FY 1987 request is allocated as follows: \$2.3 million for tower radar indicators, \$1.7 million for nap-of-the-earth communications and \$.8 million for tactical navigation beacons. The FY 1988 request funds: \$.6 million for night vision goggle tactical airfield lighting sets, \$1.7 million for tactical control towers and \$.6 million for tactical non directional beacons.

(\$ in Thousands)	
FY 1987	FY 1988
\$37,700	\$61,500

Synthetic Flight Training Systems - (P-1 Line Item 38).

The \$37.7 million in FY 1987 is for the third year option of a five year conventional multiyear program which will be exercised to purchase three UH-60 simulators (\$37.7 million). In FY 1988 the 4th year option of the UH-60 simulator contract will be exercised to purchase three additional UH-60 simulators (\$46.5 million). \$15.0 million will be used to upgrade/modify the AH-64 Combat Mission Simulators to aircraft configuration.

(\$ in Thousands)	
FY 1987	FY 1988
\$16,000	\$22,800

Industrial Facilities - (P-1 Line Item 39).

The \$16.0 million requested in FY 1987 is for support of the Army Aviation Program Industrial Facilities. It includes \$8.3 million for rehabilitation and provision of industrial equipment, and \$7.7 million for depot maintenance plant equipment (DMPE). The \$22.8 million requested in FY 1988 includes \$15.0 million for rehabilitation and provision of industrial equipment, and \$7.8 million for depot maintenance plant equipment (DMPE).

(\$ in Thousands)	
FY 1987	FY 1988
\$4,500	\$4,200

War Consumables - (P-1 Line Item 40).

In FY 1987 \$4.5 million is requested for 7 tube and 19 tube Hydra 70 (2.75 inch) Lightweight Rocket launchers to be used on the AH-1 COBRA/TOW and AH-64 attack helicopters. These launchers are required in order to fire the new family of Hydra 70 rockets with remote set fuzing options. Resources requested in FY 1988 will continue this program.

AIRCRAFT PROCUREMENT, ARMY

Section 3

Comparison of Program Requirements and Financing

Comparison of FY 1986 program requirements as reflected in FY 1986 budget with FY 1986 program requirements as shown in FY 1987 budget.

Comparison in FY 1986 financing as reflected in FY 1986 budget with FY 1986 financing as shown in FY 1987 budget.

Comparison of FY 1985 program requirements as reflected in FY 1986 budget with FY 1985 program requirements as shown in FY 1987 budget.

Comparison of FY 1985 financing as reflected in FY 1986 budget with FY 1985 financing as shown in FY 1987 budget.

1-31 February 1986

COMPARISON OF FY 1986 PROGRAM REQUIREMENTS
AS REFLECTED IN FY 1986 BUDGET WITH
FY 1986 PROGRAM REQUIREMENTS AS SHOWN IN FY 1987 BUDGET
SUMMARY OF REQUIREMENTS (In Thousands of Dollars)

Appropriation	Total Program Requirements	Program Requirements	Increase (+) or Decrease (-)
Aircraft Procurement, Army	Per FY 1986 Budget	Per FY 1987 Budget	
Activity 1 - Aircraft	1,842,500	1,694,000	-148,500
Activity 2 - Modification of Aircraft	788,100	726,100	- 62,000
Activity 3 - Spares and Repair Parts	949,700	814,300	-135,400
Activity 4 - Support Equipment and Facilities	312,200	289,800	- 22,400
TOTAL	3,892,500	3,524,200	-368,300

Explanation by Activity

Activity 1 - Aircraft - Net decrease is due to Congressional actions and internal Army adjustments that decreased EH-60A (-\$14,000), AH-64 (-\$90,400), and UH-60A (-\$56,100). These reductions were offset by Congressional increase to C-12 (+\$12,000).

Activity 2 - Modification of Aircraft - Net increase is due to Congressional actions and internal Army adjustments that decreased OV-1 (-\$5,000), RC-12D (-\$500), RV-1 (-\$500), CH-47 (-\$34,300), UH-1 (-\$500), UH-60A (-\$1,800), AHIP (-\$23,100), and 9WW (-\$700). These reductions were offset by Congressional increase to AH-1S of (+\$4,400).

Activity 3 - Spares and Repair Parts - Net increase is due to decrease in replenishment and initial provisioning spares (-\$135,400).

Activity 4 - Support Equipment and Facilities - Net decrease is due to decreases to Avionics Support Equipment (-\$2,800), Common Ground Equipment (-\$1,500), Air Traffic Control (-\$400), Synthetic Flight Training Systems (-\$14,500), Industrial Facilities (-\$2,600), and War Consumables (-\$600).

1-32 February 1986

COMPARISON OF FY 1986 FINANCING AS REFLECTED
IN THE FY 1986 BUDGET WITH FY 1986 FINANCING
AS SHOWN IN FY 1987 BUDGET

Appropriation	(In Thousands of Dollars)	
	Financing Per FY 1986 Budget	Financing Per FY 1987 Budget Increase (+) or Decrease (-)
Aircraft Procurement, Army		
Program Requirements, (Total)		
Program Requirements (Service Account)	4,038,300	3,608,000
Program Requirements (Reimbursable)	(3,892,500)	(3,524,200)
Less:	(- 145,800)	(83,800)
Anticipated reimbursements	-145,800	- 83,800
Reprogramming from prior year budget plans		+ 62,000
Unobligated balance available from prior year to finance new budget plans		
Unobligated balance transferred to other accounts		
Add:		
Unobligated balance transferred to other accounts		
Unobligated balance available to finance subsequent year budget plans		
BUDGET AUTHORITY	3,892,500	3,524,200
Appropriation	3,892,500	3,524,200
		-368,300
		-368,300

EXPLANATION OF CHANGES IN FINANCING

Net decrease to budget authority is due to Congressional actions taken on the FY 1986 Budget Request and transfers to other operating accounts.

1-33 February 1986

COMPARISON OF FY 1985 PROGRAM REQUIREMENTS
AS REFLECTED IN FY 1986 BUDGET WITH
FY 1985 PROGRAM REQUIREMENTS AS SHOWN IN FY 1987 BUDGET
SUMMARY OF REQUIREMENTS (In Thousands of Dollars)

Appropriation Aircraft Procurement, Army	Total Program Requirements		Program Requirements		Increase (+) or Decrease (-)
	Per FY 86 Budget	Per FY 87 Budget	Per FY 86 Budget	Per FY 87 Budget	
Activity 1 - Aircraft					
Activity 2 - Modification of Aircraft	2,039,000	2,040,853			+ 1,853
Activity 3 - Spares and Repair Parts	868,000	857,890			-10,110
Activity 4 - Support Equipment and Facilities	675,900	677,657			+ 1,757
	317,800	277,400			-40,400
TOTAL	3,900,700	3,853,800			-46,900

Explanation by Activity

Activity 1 - Aircraft - Net decrease is due to increases to RC-12D (+\$9,967) and EH-60A (+\$9,466), offset by decreases to AH-64 (-\$100) and UH-60A (-\$17,480).

Activity 2 - Modification of Aircraft - Net decrease results from the following increases: OV-1 (+\$4,563), EH-1 (+\$1,480), OH-58 (+\$9,973), UH-1 (+\$4,597), UH-60A (+\$9,937), AHIP (+\$3,758), Airborne Avionics (+\$2,503), Mods Under \$2.0 million (+\$960) and 9WW (+\$7,350); offset by the following decreases: RC-12D (-\$1,632), RV-1 (-\$1,773), AH-1S (-\$8,366), AH-1 (-\$3,000), and CH-47 (-\$40,460).

Activity 3 - Spares and Repair Parts - Net increase is due to increase in replenishment and initial provisioning spares (+\$1,757).

Activity 4 - Support Equipment and Facilities - Net decrease is due to decreases in Avionics Support Equipment (-\$9,375), Common Ground Equipment (-\$16,281), Synthetic Flight Training Systems (-\$1,669), and Industrial Facilities (-\$13,075).

COMPARISON OF FY 1985 FINANCING AS REFLECTED
IN THE FY 1986 BUDGET WITH FY 1985 FINANCING
AS SHOWN IN FY 1987 BUDGET

Appropriation	(In Thousands of Dollars)		
	Financing Per FY 1986 Budget	Financing Per FY 1987 Budget	Increase (+) or Decrease (-)
Aircraft Procurement, Army			
Program Requirements, (Total)	4,010,500	3,903,318	-107,182
Program Requirements (Service Account)	(3,900,700)	(3,853,800)	(-46,900)
Program Requirements (Reimbursable)	(109,800)	(49,518)	(-60,282)
Less:			
Anticipated Reimbursements	-109,800	-49,623	+60,177
Offsetting collections from Federal Trust and non-Federal sources			
Reprogramming from prior year budget plans		-33,695	-33,695
Unobligated balance available from prior year to finance new budget plans			
Unobligated balance transferred to other accounts			
Add:			
Reprogramming to prior year budget plans			
Unobligated balance transferred to other accounts			
Unobligated balance lapsing		120,900	+120,900
Unobligated balance available to finance subsequent year budget plans			
BUDGET AUTHORITY	3,900,700	3,940,900	+40,200
Appropriation	3,940,900	3,940,900	0
Transferred to other accounts(-)	-40,200		+40,200
Appropriation (adjusted)	3,900,700	3,940,900	+40,200

EXPLANATION OF CHANGES IN FINANCING

Net increase to budget authority is due to Congressional actions taken on the FY 1986 Budget Request.

1-35 February 1986

AIRCRAFT PROCUREMENT, ARMY

Section 4

Status of Aircraft Modification Programs

1-36 February 1986

Status of Aircraft Modification Program

FY 1984 Modification Programs

Programs as of 31 October 1985 (\$ Million)

<u>Program</u>	<u>Appropriated</u>	<u>Reprogramming</u>	<u>Total Program Value</u>	<u>Total Obligations</u>	<u>Total Disbursements</u>
Airplane, Surveillance, OV-1	17.7	-	17.7	17.3	7.0
Airplane, Reconnaissance, RC-12D	4.6	- 1.8	2.8	1.6	1.3
Airplane, Reconnaissance, RV-1	.1	+ 6.4	6.5	2.8	-
Helicopter, Attack, AH-1S	59.2	-	59.2	47.7	18.3
Helicopter, Cargo, CH-47	330.3	-	330.3	303.7	272.0
Airplane, Utility, U-21	2.9	-	2.9	2.9	2.5
Helicopter, Electronic, EH-1	.4	+ 2.7	3.1	3.1	.4
Helicopter, Observation, OH-58	12.5	+ .1	12.6	11.3	1.5
Army Helicopter Improvement Program (AHIP)	175.4	+ 6.9	182.3	151.0	53.5
Airborne Avionics	2.4	+ .1	2.5	2.5	.6
Aircraft 9WW	45.2	+ 2.7	47.9	38.5	28.4
Modifications under \$900,000	.2	+ 4.5	4.7	2.5	.5
UH-60A Mods	1.9	-	1.9	.2	.2

1-37 February 1986

Status of Aircraft Modification Program

FY 1985 Modification Programs

Programs as of 31 October 1985 (\$ Million)

<u>Program</u>	<u>Appropriated</u>	<u>Reprogramming</u>	<u>Total Program Value</u>	<u>Total Obligations</u>	<u>Total Disbursements</u>
Airplane, Surveillance, OV-1	20.3	+ 4.6	24.9	20.3	.2
Airplane, Reconnaissance, RC-12D	7.8	- 1.6	6.2	4.1	-
Airplane, Reconnaissance, RV-1	6.5	- 1.8	4.7	2.7	-
Helicopter, Attack, AH-1S	90.0	+ .3	90.3	35.9	1.1
AH-1 Training Devices (HITMORE)	3.0	- 3.0	-	-	-
Helicopter, Cargo, CH-47	431.9	-20.0	411.9	356.1	2.9
Helicopter, Electronic, EH-1	2.2	+ 1.5	3.7	1.1	.1
Helicopter, Observation, OH-58	4.0	+10.0	14.0	4.5	.2
Helicopter, Utility, UH-1	1.9	+ 4.6	6.5	3.4	-
Army Helicopter Improvement Program (AHIP)	204.4	+ 3.8	208.2	47.1	1.1
Airborne Avionics	7.0	+ 2.5	9.5	1.1	.2
Aircraft 9WW	59.5	+ 7.4	66.9	38.6	8.7
Modifications under \$900,000	.1	+ 1.0	1.1	-	-
UH-60A Mods	5.9	+ 9.9	15.8	12.6	.4

1-38 February 1986

Status of Aircraft Modification Program

FY 1986 Modification Programs

Programs as of 31 October 1985 (\$ Million)

<u>Program</u>	<u>Appropriated</u>	<u>Reprogramming</u>	<u>Total Program Value</u>	<u>Total Obligations</u>	<u>Total Disbursements</u>
Airplane, Surveillance, OV-1	27.7	-	27.7	-	-
Airplane, Reconnaissance, RC-12D	.5	-	.5	-	-
Airplane, Reconnaissance, RV-1	.5	-	.5	-	-
Helicopter, Attack, AH-1S	124.5	-	124.5	-	-
Helicopter, Cargo, CH-47	378.1	-	378.1	-	-
Helicopter, Cargo, CH-54	.5	-	.5	-	-
Helicopter, Utility, UH-1	12.2	-	12.2	-	-
Army Helicopter Improvement Program (AHIP)	210.6	-	210.6	-	-
Airborne Avionics	1.0	-	1.0	-	-
Aircraft 9WW	17.0	-	17.0	-	-
Modifications under \$900,000	.1	-	.1	-	-
UH-60A Mods	15.4	-	15.4	-	-

1-39 February 1986

AIRCRAFT PROCUREMENT, ARMY

Section 5

Flight Simulator Procurement Program

Exhibit PB-32E

Exhibit P-43

1-40 February 1986

FLIGHT SIMULATOR DATA SHEET
FY 1987 Budget Estimate

Simulator Model: AH-64 Combat Mission Simulator (2B40)

Aircraft System Supported: AH-64 Attack Helicopter (APACHE)

Description of Simulator: The prototype AH-64 Combat Mission Simulator will be designed to provide a training capability for flight and weapon delivery, normal and emergency procedures, and sensor system operating tasks required in the operational design basis helicopter. The simulator will consist of pilot and copilot/gunner trainee modules, instructor modules, motion subsystems, visual subsystems, and a computer complex. The pilot and copilot/gunner trainee modules will be replicas of the actual aircraft cockpits and each will be mounted on a six degree-of-freedom of motion base. The visual subsystem will provide a current state-of-the-art out-the-window scene and sensor imagery to each of the appropriate crew-member video displays. Simulated imagery includes Forward Looking Infrared (FLIR), Day Television (DTV), and Direct View Optics (DVO). Pilot displays consist of the Integrated Helmet and Display Sight System Helmet Display Unit (IHADSS HDU) and a panel mounted Video Display Unit (VDU). Gunner displays include the IHADSS HDU, a target acquisition and designation sight Heads Down Display (HDD), and a TADS Heads Out Display (HOD). The simulator will be operated through the computer complex which will fulfill subsystem interface requirements. The training functions will be controlled from the instructor's station located behind each trainee module. The pilot and copilot/gunner will have the capability to train individually or may train as a team performing an integrated combat mission.

Development Status: Six production devices in addition to the prototype are planned in the Basis of Issue Plan. The production devices will be similar to the prototype with plans in FY 1988 to upgrade all devices (visual systems and aircraft configuration) under a pre-planned product improvement program. Two units in FY 1985 and four units in FY 1986.

<u>Funding Data:</u> (In Millions)	<u>FY 1985</u>	<u>FY 1986</u>	<u>FY 1987</u>	<u>FY 1988</u>
Quantity	(2)	(4)		
Procurement (Aircraft)	\$66.1	\$62.8		\$15.0
RDTE	\$17.2	\$ 5.6	\$2.0	0
Total	\$83.3	\$68.4	\$2.0	\$15.0

Basis for FY 1987 Request: No FY 1987 resources are requested.

Contract Data: Procurement of units 1-2 in FY 1985 were awarded in December 1984 with delivery scheduled for August 1986. Units 3-5 were awarded with FY 1986 aircraft procurement funds in December 1985 with delivery scheduled for March 1988.

Cost History Comparison: Prior and current year funding was reduced by changes to inflation from the approved Congressional baseline.

FLIGHT SIMULATOR DATA SHEET
FY 1987 Budget Estimate

Simulator Model: CH-47 Flight Simulator (2B31)

Aircraft System Supported: CH-47 Cargo Helicopter

Description of Simulator: The CH-47 Flight Simulator is designed to provide training in normal operating and emergency procedures. It consists of a trainee station with positions for pilot and copilot trainees and is an authentic replica of the aircraft. Included in the cockpit is an instructor station and an observer station. The instructor station design and arrangement was based upon human engineering analysis of instructor's duties and the requirement for an effective instructor/trainee interface. The cockpit is mounted upon a six degree-of-freedom motion system to provide roll, pitch, yaw, vertical, lateral, and longitudinal motion cues. A high resolution front and side visual system consisting of two 1000:1 scale three dimensional terrain models 56' long by 24' high and roving television cameras that are synchronized with cockpit control inputs which provide a display to each trainee that is viewed through the front and side windows. Each trainee has an additional display at the chin window location consisting of computer generated symbology which provides relative altitude and motion indications when maneuvering near the ground at designated landing sites. The entire trainer is stimulated by a DEC PDP 11/55 computer complex.

Development Status: Aircraft Procurement, Army funding provides for retrofit of 1 simulator in FY 1985 and 2 in FY 1986.

<u>Funding Data:</u> (In Millions)	<u>FY 1985</u>	<u>FY 1986</u>	<u>FY 1987</u>	<u>FY 1988</u>
Quantity (Retrofit)	(1)	(2)		
Procurement (Aircraft)	\$8.4	\$16.9		

Basis for FY 1987 Request: No FY 1987 resources are required.

Contract Data: Retrofitting in FY 1985/1986 are contract options to sole source Firm Fixed Price contract awarded November 1984. FY 1985 contract option was awarded in November 1984 with delivery scheduled in August 1987. FY 1986 contract option was awarded in December 1985 with delivery in March 1988.

Cost History Comparison: The FY 1985/1986 program remains unchanged from that approved by Congress.

EXHIBIT PB-32E

FLIGHT SIMULATOR DATA SHEET
FY 1987 Budget Estimate

Simulator Model: UH-60 Flight Simulator (2B38)

Aircraft System Supported: UH-60A BLACK HAWK

Description of Simulator: The production UH-60 BLACK HAWK Flight Simulator consists of a single cockpit mounted on a six degree-of-freedom motion system which is computer controlled. The design baseline for the simulator cockpit configuration and system performance is UH-60A aircraft number 82-23748. The cockpit is an exact replica of the design base aircraft from the trainee station forward. The Army Tactical Digital Image Generator (ATACDIG) produces the visual scene presented to the pilot and copilot.

The simulator is designed to provide institutional and unit continuation training in normal operating and emergency procedures and tactical operations. To simulate a tactical combat environment the ATACDIG visual system provides interactive ground and air moving threat vehicles. The simulator can train: low level, contour, NOE, confined areas, pinnacle operations, sling loads, and formation flight.

Development Status: Program provides for 15 production units plus the retrofit of one prototype unit with contract award for units with 13-15 in October 1987.

<u>Funding Data:</u> (In Millions)	<u>FY 1985</u>	<u>FY 1986</u>	<u>FY 1987</u>	<u>FY 1988</u>
Quantity	(3)	(3)	(3)	(3)
Procurement (Aircraft)	\$50.0	\$37.4	\$37.7	\$46.5

Basis for FY 1987 Request: Production of UH-60 simulators falls under a firm, fixed price contract, a five year conventional multiyear contract approved for prior year procurements.

Contract Data: The Basis for Issue is 15 production units plus the retrofit of 1 prototype unit (2 cockpits), with plans to upgrade previously procured simulators to support changes in the aircraft under a pre-planned product improvement program in FY 1988. FY 1985 units awarded in November 1984 and delivered in December 1987; FY 1986 units awarded in November 1985 and delivered in December 1988; FY 1987 units awarded in October 1986 and delivered in June 1989; and FY 1988 units awarded in October 1987 and delivered in December 1989.

Cost History Comparison: Program adjustments to FY 1985 and FY 1986 are a result of inflation recalculations.

EXHIBIT PB-32E

FLIGHT SIMULATOR DATA SHEET
FY 1987 Budget Estimate

Simulator Model: AH-1 Flight/Weapons Simulator (2B33)

Aircraft System Supported: AH-1S Attack Helicopter

Description of Simulator: The AH-1 Flight/Weapons Simulator is designed to provide training in normal aircraft operating procedures, emergency procedures and gunnery techniques including delivery of the TOW missile, 2.75 rocket and 20MM cannon. The trainer consists of two cockpits representing the pilot and gunner stations respectively, with each mounted on its own six degree-of-freedom of motion system, and the entire complex is controlled by a DEC PDP 11/55 computer system. Each cockpit is an authentic replica of the actual aircraft from the trainee station forward. An instructor station and observe seat are installed aft of the trainee stations.

The trainer includes a visual system that provides day and night visual cues to the trainees as well as weapons' effect. This high resolution visual system on the initial five production units employs a closed circuit television system with a three dimensional terrain model. Two identical 64' long x 24' high models represent a training area approximately 12 x 5 nautical miles in area. A roving laser scanner, synchronized with cockpit maneuvers, provides the visual presentation which is seen by the trainee and instructor through the front window. The pilot station includes a side window to enlarge the field of view available to the pilot when required for certain maneuvers such as autorotation. By providing two identical model boards we have the option of flying separate training missions for the pilot and the gunner simultaneously or we can link the two cockpits together electronically and provide a team training capability. The remaining three production units will be equipped with a Digital Image Generator visual system that will provide commonality with the AH-64, UH-60 and CH-47 simulators.

Development Status: Final two units are funded with FY 1985 Aircraft Procurement, Army resources and are scheduled for delivery in February 1988.

<u>Funding Data:</u> (In Millions)	<u>FY 1985</u>	<u>FY 1986</u>	<u>FY 1987</u>	<u>FY 1988</u>
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Quantity	(2)			
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Procurement (Aircraft)	\$31.8			
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Basis for FY 1987 Request: No FY 1987 resources are required.

Contract Data: Procurement of final two simulator units were awarded as an option to original contract dated April 1981. Option contract award date - November 1984 with delivery date of February 1988.

Cost History Comparison: Resources remain as approved and adjusted by Congress.

EXHIBIT PB-32E

FY 87 BUDGET ESTIMATE

FLIGHT SIMULATOR AND OTHER AIRCRAFT TRAINING EQUIPMENT

EXHIBIT P-43

(Dollars in Millions)

APPROPRIATION: Aircraft Procurement, Army

<u>Weapon System</u>	<u>Equipment Nomenclature</u>	<u>P-1 Line Item</u>	<u>FY 1985 Qty/Amount</u>	<u>FY 1986 Qty/Amount</u>	<u>FY 1987 Qty/Amount</u>	<u>FY 1988 Qty/Amount</u>
CH-47 (2B31)(SSNA09100)	FS	38	- 8.4	- 16.9	- -	- -
AH-1 (2B33)(SSNA09300)	FWS	38	2 31.8	- -	- -	- -
UH-60 (2B38)(SSNA09400)	FS	38	3 50.0	3 37.4	3 37.7	3 46.5
AH-64 (2B40)(SSNA09000)	FWS	38	2 66.1	4 62.8	- -	- 15.0

1-45 February 1986