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DEPARTMENT OF THE ARMY

JUSTIFICATION OF ESTIMATES FOR FISCAL YEAR 1982

SUBMITTED TO CONGRESS

JANUARY 1981

Part 1. Aircraft.

11 Jan 81

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APR 6 1981



**PART 1 OF 5 PARTS
(AIRCRAFT)**

12 163

PROCUREMENT

PROGRAMS

AIRCRAFT

MISSILES

WEAPONS & TRACKED COMBAT VEHICLES

AMMUNITION

OTHER

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DEPARTMENT OF THE ARMY
Office of the Deputy Chief of Staff
For
RESEARCH, DEVELOPMENT, AND ACQUISITION

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January 1981

DEPARTMENT OF THE ARMY
PROCUREMENT APPROPRIATIONS

Justification of Estimates for Fiscal Years 1982, 83 (Auth Only)

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Department of the Army
Aircraft Procurement, Army

Justification of Estimates for Fiscal Year 1982, 1983

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AIRCRAFT PROCUREMENT, ARMY

Section 1

Budget Appendix Extract

Language

Program and Financing Schedule

Object Classification Schedule

APPROPRIATION LANGUAGE

For construction, procurement, production, modification and modernization of aircraft, equipment, including ordnance, ground handling equipment, spare parts, and accessories therefor; specialized and training devices; expansion of public and private plants, including the land necessary therefor, without regard to section 4774, title 19, United States Code, for the foregoing purposes, and such lands and interests therein, may be acquired, and construction prosecuted thereon prior to approval of title as required by section 355, Revised Statutes, as amended; 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; (\$925,300,000), \$1,361,700, to remain available (1)
for obligation until September 30, (1983) 1984 (2)

(10 U.S.C. 2353, 3012, 4531, 4532, 31 U.S.C. 649c; Department of Defense Appropriation Act, 1980, additional authorizing legislation to be proposed.)

EXPLANATION OF LANGUAGE CHANGES

- (1) To change the amount of appropriation requested for FY 1982.
- (2) To change the obligation expiration date for the FY 1982 program.

Army

Aircraft Procurement, Army

15 JAN 81

Program and Financing (in thousands of dollars)

Identification code	21-2031-0-1-051	Budget plan (amounts for procurement actions programmed)			Obligations			
		1980 actual	1981 est.	1982 est.	1980 actual	1981 est.	1982 est.	
Program by activities:								
Direct:								
1.	Aircraft	398,000	488,100	750,100	377,822	482,861	830,301	
2.	Modification of aircraft	419,108	418,800	302,800	384,524	410,485	388,749	
3.	Spares and repair parts	70,800	139,300	193,400	76,858	128,060	202,000	
4.	Support equipment and facilities	58,258	54,400	115,400	50,351	72,329	105,858	
	Total direct	946,167	1,078,400	1,361,700	889,255	1,070,535	1,303,708	
	Reimbursable program (total)	27,195	32,000	35,100	24,040	36,965	33,596	
10.00	Total	973,362	1,108,400	1,396,800	913,295	1,107,500	1,337,304	
Financing:								
Offsetting collections from:								
11.00	Federal funds	-11,754	-15,100	-16,600	-10,795	-15,100	-16,600	
13.00	Trust funds	-15,441	-16,900	-16,500	-14,151	-16,900	-16,500	
17.00	Recovery of prior year obligations, obl plan				-2,548			
	Unobligated balance available, start of year:							
21.40	For completion of prior year budget plans				-192,849	-241,232	-242,132	
21.40	Reprogramming from or to prior year budget plan	-11,983						
23.40	Unobligated balance transferred to other accounts	1,348			1,348			
24.40	Unobligated balance available, end of year				241,232	242,132	301,628	
25.00	Unobligated balance lapsing	10,637			10,637			
39.00	Budget authority	946,167	1,078,400	1,361,700	946,167	1,078,400	1,361,700	
Budget authority:								
40.00	Appropriation	961,837	1,078,400	1,361,700	961,837	1,078,400	1,361,700	
41.00	Transferred to other accounts	-15,670			-15,670			
43.00	Appropriation (adjusted)	946,167	1,078,400	1,361,700	946,167	1,078,400	1,361,700	
Relation of obligations to outlays:								
71.00	Obligations incurred, net				888,349	1,075,500	1,302,204	
72.40	Obligated balance, start of year				1,130,640	1,216,438	1,366,938	
74.40	Obligated balance, end of year				-1,216,438	-1,366,938	-1,652,142	
77.00	Adjustments in expired accounts				-12,848			
78.00	Adjustments in unexpired accounts				-2,548			
90.00	Outlays				767,355	925,000	1,017,000	

Army

Aircraft Procurement, Army

15 JAN 81

Object Classification (in thousands of dollars)

Identification code	21-2001-0-1-051	1980 actual	1981 est.	1982 est.
Direct obligations:				
Other services:				
25.0	Other	130,188	134,800	205,800
26.0	Supplies and materials	61,122	64,800	99,500
31.0	Equipment	697,947	871,135	999,408
99.0	Total direct obligations	889,255	1,070,535	1,303,708
Reimbursable obligations:				
Other services:				
25.0	Other	4,549	5,700	5,100
26.0	Supplies and materials	2,178	2,700	2,400
31.0	Equipment	17,313	28,585	26,098
99.0	Total reimbursable obligations	24,040	36,985	33,598
99.9	Total obligations	913,295	1,107,520	1,337,306

Army

Aircraft Procurement, Army

15 JAN 81

Program and Financing (in thousands of dollars)

1978 Fiscal year program

Identification code	21-2031-0-1-051	Budget plan (amounts for procurement actions programmed)			Obligations			
		1980 actual	1981 est.	1982 est.	1980 actual	1981 est.	1982 est.	
Program by activities:								
Direct:								
	1. Aircraft				8,788			
	2. Modification of aircraft				10,283			
	3. Spares and repair parts				6,580			
	4. Support equipment and facilities				4,228			
	Total direct				27,899			
	Reimbursable program (total)				1,452			
10.00	Total				29,291			
Financing:								
Offsetting collections from:								
11.00	Adjustment to py federal fund orders				1,121			
13.00	Adjustment to py trust fund orders				1,099			
17.00	Recovery of prior year obligations, obl plan				-787			
	Unobligated balance available, start of year:							
21.40	For completion of prior year budget plans				-42,231			
21.40	Reprogramming from or to prior year budget plan	-11,488						
23.40	Unobligated balance transferred to other accounts				849			
25.00	Unobligated balance lapsing	10,637			10,637			
40.00	Budget authority							

Army

Aircraft Procurement, Army

15 JAN 81

Program and Financing (in thousands of dollars)

1979 Fiscal year program

Identification code	21-2031-0-1-051	Budget plan (amounts for procurement actions programmed)			Obligations		
		1980 actual	1981 est.	1982 est.	1980 actual	1981 est.	1982 est.
Program by activities:							
Direct:							
	1. Aircraft				17,324	38,484	
	2. Modification of aircraft				27,889	18,297	
	3. Spares and repair parts				11,271	8,167	
	4. Support equipment and facilities				5,420	11,832	
	Total direct				61,704	77,480	
	Reimbursable program (total)				9,121	3,589	
10.00	Total				70,825	81,049	
Financing:							
Offsetting collections from:							
11.00	Adjustment to py federal fund orders				-182		
13.00	Adjustment to py trust fund orders				191		
17.00	Recovery of prior year obligations, obi plan				-1,781		
21.40	Unobligated balance available, start of year:						
21.40	For completion of prior year budget plans				-150,818	-81,049	
21.40	Reprogramming from or to prior year budget plan	-497					
23.40	Unobligated balance transferred to other accounts	497			497		
24.40	Unobligated balance available, end of year				81,049		
40.00	Budget authority						

Army

Aircraft Procurement, Army

15 JAN 81

Program and Financing (in thousands of dollars)

1980 Fiscal year program

Identification code	21-2031-0-1-051	Budget plan (amounts for procurement actions programmed)			Obligations			
		1980 actual	1981 est.	1982 est.	1980 actual	1981 est.	1982 est.	
Program by activities:								
Direct:								
	1. Aircraft	398,000			353,730	24,853	19,418	
	2. Modification of aircraft	419,109			348,872	51,788	20,749	
	3. Spares and repair parts	70,800			58,707	8,493	3,800	
	4. Support equipment and facilities	58,258			40,703	14,487	3,058	
	Total direct	946,167			799,712	99,631	46,825	
	Reimbursable program (total)	27,195			13,487	9,376	4,351	
10.00	Total	973,362			813,179	109,007	51,176	
Financing:								
Offsetting collections from:								
11.00	Federal funds	-11,754			-11,754			
13.00	Trust funds	-15,441			-15,441			
21.40	Unobligated balance available, start of year					-180,183	-51,176	
24.40	Unobligated balance available, end of year				180,183	51,176		
39.00	Budget authority	946,167			946,167			
Budget authority:								
40.00	Appropriation	961,837			961,837			
41.00	Transferred to other accounts	-15,670			-15,670			
43.00	Appropriation (adjusted)	946,167			946,167			

Army

Aircraft Procurement, Army

15 JAN 81

Program and Financing (in thousands of dollars)

1981 Fiscal year program

Identification code	21-2031-0-1-051	Budget plan (amounts for procurement actions programmed)			Obligations			
		1980 actual	1981 est.	1982 est.	1980 actual	1981 est.	1982 est.	
Program by activities:								
Direct:								
1.	Aircraft	.....	488,100	.....	.....	399,944	55,172	
2.	Modification of aircraft	.....	418,800	.....	.....	339,400	49,100	
3.	Spares and repair parts	.....	139,300	.....	.....	108,400	18,800	
4.	Support equipment and facilities	.....	84,400	.....	.....	48,900	8,900	
Total direct		.....	1,076,400	.....	.....	893,444	128,872	
Reimbursable program (total)		.....	32,000	.....	.....	24,000	2,920	
10.00	Total	.....	1,108,400	.....	.....	917,444	129,592	
Financing:								
Offsetting collections from:								
11.00	Federal funds	.....	-18,100	.....	.....	-18,100	.....	
13.00	Trust funds	.....	-16,900	.....	.....	-16,900	.....	
21.40	Unobligated balance available, start of year	.....	.....	.....	.....	.....	-190,958	
24.40	Unobligated balance available, end of year	.....	.....	.....	.....	190,958	81,384	
40.00	Budget authority	.....	1,076,400	.....	.....	1,076,400	.....	

Army

Aircraft Procurement, Army

15 JAN 81

Program and Financing (in thousands of dollars)

1982 Fiscal year program

Identification code		Budget plan (amounts for procurement actions programmed)			Obligations		
		1980 actual	1981 est.	1982 est.	1980 actual	1981 est.	1982 est.
Program by activities:							
Direct:							
	1. Aircraft			750,100			555,711
	2. Modification of aircraft			302,600			295,900
	3. Spares and repair parts			193,400			192,600
	4. Support equipment and facilities			115,400			95,600
	Total direct			1,361,700			1,130,211
	Reimbursable program (total)			35,100			26,325
10.00	Total			1,396,800			1,156,536
Financing:							
Offsetting collections from:							
11.00	Federal funds			-18,600			-18,600
13.00	Trust funds			-18,500			-18,500
24.40	Unobligated balance available, end of year						240,264
40.00	Budget authority			1,361,700			1,361,700

AIRCRAFT PROCUREMENT, ARMY

Section 2

Introductory Statement

1-40 - 1/15/81

DEPARTMENT OF THE ARMY
ANNUAL BUDGET ESTIMATES

Appropriation:

FY 1982, 83
Budget

Aircraft Procurement, Army

Section 2 - INTRODUCTORY STATEMENT

This appropriation finances the acquisition of tactical and utility airplanes and helicopters, including associated electronics, electronic warfare and communications equipment and armament; modification of in-service aircraft; ground support equipment; and depot reparable assemblies, components and repair parts such as spare engines, transmissions, gear boxes and sensor equipment. It also funds related training devices such as combat mission flight simulators and production base support.

The 1982 program continues acquisition of the UH-60A BLACK HAWK utility helicopter. It initiates production of the AH-64 Advanced Attack Helicopter. It continues the TOW missile-launching attack helicopter AH-1 modification program which provides additional heliborne anti-armor firepower; and continues to improve the Special Electronic Mission Aircraft Fleet. In addition, the 1982 program continues modification/modernization of CH-47 medium-lift helicopter fleet to enhance productivity, safety and survivability.

AIRCRAFT PROCUREMENT, ARMY

Section 3

Summary of Requirements

1-12 - 1/15/80

SUMMARY OF REQUIREMENTS (In Thousands of Dollars)

Appropriation:	FY 1980 Actual	FY 1981 Estimate	FY 1982 Estimate
Aircraft Procurement, Army			
Aircraft	398,000	466,100	750,100
Modification of Aircraft	419,109	416,600	302,800
Spare and Repair Parts	70,800	139,300	193,400
Support Equipment and Facilities	58,258	54,400	115,400
Total Direct Program	946,167	1,076,400	1,361,700
Reimbursable Program	27,195	32,000	35,100
TOTAL PROGRAM REQUIREMENTS	973,362	1,108,400	1,396,800
Less: Portion of program to be obligated in subsequent fiscal years	160,183	190,956	240,264
Plus: Obligations incurred against prior year program funds	100,116	190,056	180,768
TOTAL OBLIGATIONS	913,295	1,107,500	1,337,304

1-13- 1/15/81

SUMMARY OF REQUIREMENTS (In Thousands of Dollars)

Appropriation	FY 1983 Estimate
Aircraft Procurement, Army	
Aircraft	1,085,300
Modification of Aircraft	389,800
Spares and Repair Parts	263,500
Support Equipment and Facilities	147,800
Total Direct Program	1,886,400

AIRCRAFT PROCUREMENT, ARMY

Section 4

Budget Activity Justifications

Activity 1 - Aircraft

Activity 2 - Modification of Aircraft

Activity 3 - Spares and Repair Parts

Activity 4 - Support Equipment and Facilities

1-15 - 1/15/81

FORMAT 1	Department of the Army Annual Budget Estimate JUSTIFICATION	Appropriation Aircraft Procurement, Army	FY 1982 Budget
	Budget Program or Budget Project Account	(Thousands of Dollars)	
	Budget Activity 1 - Aircraft	Actual	Estimate
		FY 1980	FY 1981
	Direct Obligation or Direct Budget Plan Direct Obligation	\$398,000	\$466,100

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 REQUIRED

This program provides for procurement for 86 attack, utility, and Special Electronic Mission aircraft to meet combat, tactical training and combat support needs of the Army.

Helicopter, BLACK HAWK - \$372.6 million is requested for procurement of 78 UH-60A BLACK HAWK helicopters. In addition \$36.7 million is requested for advance procurement of long leadtime items and engines. This utility helicopter is the Army's first true squad carrying helicopter and is produced by Sikorsky Aircraft, Stratford, Connecticut. The BLACK HAWK is powered by two T-700 engines produced by General Electric Company, Lynn, Massachusetts. 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.

Helicopter, Attack, AH-64 - \$293.1 million is requested for the FY82 production initiation of 8 AH-64 Advanced Attack Helicopters. In addition, \$47.7 million is requested for advance procurement of long lead time items. The AH-64 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 seeker) anti-tank missiles. Target Acquisition and guidance are accomplished by the Target Acquisition and Designation Sight (TADS) that will provide extremely accurate fires with first round hit probability. The mobility and flexibility of the system coupled with its immediate responsiveness and integration with the ground command will provide the combat balance required to help defeat the Warsaw Pact threat.

FORMAT J-1	Department of the Army Annual Budget Estimate JUSTIFICATION	Appropriation Aircraft Procurement, Army	FY 1982 Budget
	Budget Program or Budget Project Account	(Thousands of Dollars)	
	Activity 1 - Aircraft		Estimate FY 1983
	Direct Obligation or Direct Budget Plan Direct Obligations		\$ 1,085,300

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 REQUIRED

This program provides for a quantity of 145 attack, utility, reconnaissance and Special Electronic Mission aircraft to meet combat, tactical training and combat support needs of the Army.

Helicopter, BLACK HAWK - \$418.1 million is requested for procurement of 90 UH-60A BLACK HAWK helicopters. In addition, \$31.5 million is requested for advance procurement of long leadtime engines and airframe components. This utility helicopter is the Army's first true squad carrying helicopter. BLACK HAWK is produced by Sikorsky Aircraft, Stratford, Connecticut. The BLACK HAWK is powered by two T-706 engines produced by General Electronic Company, Lynn, MA. 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.

Helicopter, Attack, AH-64 - \$464.7 million is requested for procurement of 44 AH-64 Advanced Attack Helicopters. In addition, \$40.2 million is requested for advance procurement of long lead items including engines, transmissions and mission equipment. The AH-64 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 conditions. The aircraft employs HELLFIRE (laser seeker) anti-tank missiles. Target acquisition and guidance is accomplished by the Target Acquisition and Designation Sight (TADS) that will provide extremely accurate fires with high first round hit probability. The mobility and flexibility of the system coupled with its immediate responsiveness and integration with the ground commander will provide the combat balance required to help defeat the Warsaw Pact Threat.

Airplane, GUARDRAIL - \$35.8 million is requested for 5 RC-12 GUARDRAIL reconnaissance airplanes as a part of the third Improved GUARDRAIL V system. The RC-12 is a twin engine, turboprop airplane equipped with a SIGINT* system which intercepts, locates and classifies target signals. It transmits data to ground processors/facilities to provide the supported commander at Division and Corps level with real time intelligence information.

FORMAT A

Department of the Army Annual Budget Estimates JUSTIFICATION		FY 1982 Budget
Appropriation	Budget Program or Budget Project Account	
Aircraft Procurement, Army	Activity 1 - Aircraft	

Helicopter, Electronic, EH-60A (QUICK FIX) - \$76.6 million is requested for procurement of 6 EH-60A QUICK FIX electronic helicopters. In addition, \$18.4 million is requested for advance procurement of long lead time engines and airframes. The EH-60A QUICK FIX utilizes the BLACK HAWK airframe to employ on-board jammers for Electronic Warfare (EW) designed to identify, locate, listen and disrupt enemy command and control communications.

FORMAT J	Department of the Army Annual Budget Estimate JUSTIFICATION	Appropriation	FY 1982
	Budget Program or Budget Project Account	Aircraft Procurement, Army	Budget
		(Thousands of Dollars)	
	Activity 2 - Modification of Aircraft	Actual Estimate	Estimate
	Direct Obligation or Direct Budget Plan Direct Obligations	FY 1980 FY 1981	FY 1982
		\$419,109 \$/ 416,600	\$' 302,800

Section 1 - PURPOSE AND SCOPE

Provides for modification of items procured by the appropriation Aircraft Procurement, Army, including modification kits. It excludes installation unless the item is furnished to a manufacturer who provides parts and labor under a single contract (excluding normal GFE). This results in an end item reconfigured to a new series designation or new operational capability.

Section 2 - JUSTIFICATION OF FUNDS REQUESTED

\$302.8 million is requested for modification of in-service aircraft and related equipment to improve flight safety, increase operational capability and extend the useful life of aircraft and equipment. Funds are requested for modification programs as follows:

OV-1 - \$15.5 million is requested for modernization of the OV-1B aircraft to a standard OV-1D configuration. This configuration accepts the palletized and improved infrared (IR) and side looking airborne radar (SLAR) packages.

RC-12 - \$52.7 million is requested for modifying C-12D twin-engine, turboprop aircraft with the GUARDRAIL airborne SIGINT *mission equipment as a part of the second Improved GUARDRAIL V system. The system transmits SIGINT data to ground processors then relays processed intelligence information to C-2 subscribers. This provides commanders at Division and Corps levels with real time intelligence information.

RV-1 - \$9.9 million is requested for converting older OV-1B aircraft to the RV-1D QUICK LOOK configuration with airborne Electronic Intelligence (ELINT) mission equipment. Other modifications include in-flight readout device, airborne magnetic tape recorder modifications, and aircraft survivability equipment.

AH-1 - \$33.1 million is requested for five product improvement programs continuing to be modified on the COBRA/TOW helicopters. These are improved attitude heading reference system, Radar Jammer, Wire Strike Protection System, Laser Warning receiver, and Nap-of-the-Earth (NOE) communications.

NOTE: Funding details of aircraft modifications to include the type and number of each to be modified, cost and description of the modifications are included in Section 8, Modification of Aircraft.

FORMAT A

Department of the Army Annual Budget Estimate JUSTIFICATION		FY 1982 Budget
Appropriation Aircraft Procurement, Army	Budget Program or Budget Project Account Activity 2 - Modification of Aircraft	

Section 2 - JUSTIFICATION OF FUNDS REQUESTED

CH-47 - \$182.5 million is requested primarily for continuation of the CH-47D modernization program and for fleet modifications with Fiberglass Rotor Blades, conversion of the T55-L-712 engine, and the Missile Detector System. 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 controls, triple hook cargo system and an 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 helicopter.

C-12 - \$.8 million is requested for PT 6A-38 to PT 6A-41 Engine Conversion; and automatic feathering and synchronization modification to increase aircraft performance and safety.

EH-1 - \$2.4 million is requested for modifying the EH-1 QUICK FIX helicopter fleet with the Missile Detector System.

OH-58 - \$1.6 million is requested for Nap-of-the-Earth (NOE) communications modifications.

Airborne Avionics - \$4.3 million is requested for airborne avionics modifications including radar altimeter, improved head set, test cables, and improved capability of the Lightweight Doppler Navigation System.

Department of the Army Annual Budget Estimate JUSTIFICATION	Appropriation Aircraft Procurement, Army	FY 1982 Budget
Budget Program or Budget Project Account Activity 2 - Modification of Aircraft	(Thousands of Dollars)	Estimate
		FY 1983
Direct Obligation or Direct Budget Plan Direct Obligations		\$ 389,800

Section 1 - PURPOSE AND SCOPE

Provides for modification of items procured by the appropriation Aircraft Procurement, Army including modification kits. It excludes installation unless the item is furnished to manufacturer who provides parts and labor under a single contract (excluding normal GFE). This results in an end item reconfigured to a new series designation or new operational capability.

Section 2 - JUSTIFICATION OF FUNDS REQUESTED

\$389.8 million is requested for modification of in-service aircraft and related equipment to improve flight safety, increase operational capability, and extend the useful life of the aircraft and equipment. Funds are requested for modification programs as follows:

OV-1 - \$24.8 million is requested to continue the OV-1B to OV-1D configuration conversion for total force modernization and improved operational capability. Other mods include AN/UPD-7 radar surveillance system RAM improved data link modifications and aircraft survivability equipment.

RV-1 - \$2.9 million is requested for required aircraft survivability equipment (Continuous Wave Radar Jammer) to allow the RV-1 to perform its mission. The RV-1D provides increased performance and capability resulting from new electronic countermeasures surveillance system employed at Corps level.

AH-1S - \$117.2 million is requested for the Forward Looking Infrared Augmented COBRA TOW Sight (FACTS), Improved TOW Missile sub-system (ITMS) which will provide the COBRA/TOW helicopter with a substantially upgraded mission capability of detecting, acquiring, and engaging targets during periods of reduced visibility and at night. It also includes funds for the following aircraft survivability modifications and product improvements: Wire Strike Protection System; Radar Jammer; Laser Warning Receiver; and Nap-of-the-Earth (NOE) communications equipment.

CH-47 - \$227.4 million is requested for continuing the modernization of the fleet to the improved CH-47D configuration. It also continues the following modification programs: Fiberglass Rotor Blades and converting the T55-L-11D to 755-L-712 Engine.

C-12 - \$.4 million continues the engine conversion and automatic feathering modifications.

FORMAT A	Department of the Army Annual Budget Estimate		FY 82
	JUSTIFICATION		Budget
	Appropriation Aircraft Procurement, Army	Budget Program or Budget Project Account Activity 2 - Modification of Aircraft	

Section 2 - JUSTIFICATION OF FUNDS REQUESTED

OH-58 - \$10.6 million continues the Nap-of-the-Earth (NOE) communications modification programs.

Airborne Avionics - \$5.1 million continues product improvement programs as follows: Improved Head Set, Solid State Radar, and Improved capability of the Lightweight Navigation Doppler System.

RC-12 GUARDRAIL - \$1.4 million is required to modify RC-12D aircraft with the continuous wave radar jammer as required aircraft survivability equipment.

NOTE: Funding details of aircraft modifications to include the type and number of each to be modified, cost and description of the modifications are included in Section 8, Modification of Aircraft.

FORMAT J	Department of the Army Annual Budget Estimate JUSTIFICATION	Appropriation Aircraft Procurement, Army		FY 1982 Budget
	Budget Program or Budget Project Account	(Thousands of Dollars)		
	Activity 3 - Spares and Repair Parts	Actual	Estimate	Estimate
		FY 1980	FY 1981	FY 1982
	Direct Obligation or Direct Budget Plan Direct Obligations	\$70,800	\$ 139,300	\$ 193,400

Section 1 - PURPOSE AND SCOPE

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

Section 2 - JUSTIFICATION OF FUNDS REQUESTED

This program provides for centrally managed, high dollar value, depot reparable spares and repair parts such as engines, transmissions, and gear boxes. Due to the high dollar value of these components, they are intensively managed.

Initial Provisioning - \$116.5 million provides for procurement of spares and repair parts to support initial fielding of new principal items or modifications of principal items. Spares are an integral part of the deployment of any aircraft system (new procurement or modification). Initial spares are ordered against the major item deployment schedule and must meet required deliveries to preclude grounding the system for lack of spare parts. The initial fielding period normally extends until sufficient experience has been accumulated to permit changeover to replenishment procedures. Aircraft end items supported in FY82 are:

AH-64	\$24.7	AH-1S	\$10.8
UH-60A	54.4	CH-47	19.7
OV-1	2.6	OH-58	.4
RC-12	3.1	EH-1	.4
RV-1	.4		

There has been an increase in initial spares cost from FY80 to FY 82. Part of this can be attributed to the new systems (\$24.7M in FY82 for AH-64) being fielded. The primary increase however, must be attributed to the increasing cost of materials required to produce these repair parts and increased production lead time. Historically, experience factors have been used to forecast aircraft systems spares requirements. The past however, is no longer a valid measure of today's environment and cannot be used in this forecasting effort. The rapid development of advanced commercial aircraft has severely tasked the industrial capacity of the aerospace industry and shortages of key raw materials have inhibited production capabilities previously available to satisfy Army needs. This has generated substantial increases in price and production lead times.

FORMAT A

Department of the Army Annual Budget Estimate JUSTIFICATION		FY 1982 Budget
Appropriation Aircraft Procurement, Army	Budget Program or Budget Project Account Activity 3 - Spares and Repair Parts	

Replenishment Spares (Peacetime) - \$76.9 million provides for procurement of spares and repair parts to support operations subsequent to initial fielding of a new or modified item. The significant increase from FY81 is attributed to a major realignment (approximately \$25 million) from stock fund to procurement appropriations dollars and weapon subsystems for the AH-1S converting from initial spares funding to replenishment (approximately \$13 million).

FORMAT J-1

Department of the Army Annual Budget Estimate JUSTIFICATION	Appropriation Aircraft Procurement, Army	FY 1982 Budget
Budget Program or Budget Project Account	(Thousands of Dollars)	Estimate
Activity 3 - Spares and Repair Parts		FY 1983
Direct Obligation or Direct Budget Plan Direct Obligations		\$ 263,500

Section 1 - PURPOSE AND SCOPE

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

Section 2 - JUSTIFICATION OF FUNDS REQUESTED

Initial Provisioning - \$109.1 million provides for procurement of spares and repair parts to support initial fielding of new principal items or modifications of principal items. The "initial fielding" period normally extends until sufficient experience has been accumulated to permit changeover to replenishment procedures. Conditions within the aerospace industry relating to scarcities of raw materials and saturation of industrial capacity are expected to continue through FY83. These adverse "marketplace constraints" are well beyond the Army's control and will continue to impact funding needs by escalating funding requirements throughout the foreseeable future.

Replenishment Spares (Peacetime) - \$154.4 million provides for procurement of spares and repair parts to support operations subsequent to initial fielding of a new or modified principal item. The significant increase from FY82 is primarily attributed to UH-60A BLACK HAWK converting from initial spares funding to replenishment.

FORMAT 1	Department of the Army Annual Budget Estimate JUSTIFICATION	Appropriation Aircraft Procurement, Army		FY 1982 Budget
	Budget Program or Budget Project Account	(Thousands of Dollars)		
	Activity 4 - Support Equipment and Facilities	Actual	Estimate	Estimate
		FY 1980	FY 1981	FY 1982
	Direct Obligation or Direct Budget Plan Direct Obligations	\$58,258	\$ 54,400	\$ 115,400

Section 1 - PURPOSE AND SCOPE

Provides for avionics support equipment including avionics spares support, and avionics communications equipment; for common ground equipment including tool sets, shop sets and components thereof, ground handling/servicing equipment air traffic control equipment, special test and diagnostic equipment, and flight simulators; for aviation night vision goggles; for industrial facilities and for war consumables.

Section - JUSTIFICATION OF FUNDS REQUESTED

The request for this activity is comprised of the following items:

Avionics Support Equipment - \$12.0 million is requested for avionics spares support for operational readiness float required to support fielded aircraft (\$9.6 million). It also provides for other communications equipment, such as position locating reporting system (PLRS) which provides position, location, identification and navigation information for the forces it supports (2.4 million).

Common Ground Equipment - \$54.6 million is requested for procurement of tools and shop sets, aviation ground support equipment, airfield support equipment, Flight Simulators and individual items that cost less than \$.9 million. Tools and Shop sets are required to fill shortages, replace obsolete equipment and implement the three level maintenance concept (\$6.3 million). Aviation Ground Support Equipment provides for the acquisition of self-propelled crane, aircraft maintenance trailer, self propelled elevating maintenance stand and engine adapters (\$6.2 million). The Airfield Support Equipment budget item provides the necessary Air Traffic Control and navigational and ground equipment to support the Army Aviation Mission at fixed Army airfields and heliports (\$5.5 million). Funds to procure two AH-1S Flight/Weapons Simulators are requested to provide training at high density units on a cost effective basis, (\$31.3 million). Individual items that cost less than \$.9 million are test equipment for maintenance of Avionics, Airborne Surveillance and Air Traffic Control hardware (\$5.3 million).

FORMAT A

Department of the Army Annual Budget Estimates JUSTIFICATION		FY 1982
Appropriation	Budget Program or Budget Project Account	Budget
Aircraft Procurement, Army	Activity 4, Support Equipment and Facilities	

Section 2 - JUSTIFICATION OF FUNDS REQUESTED

Industrial Facilities - \$35.9 million is requested for Industrial Facilities in support of the Army Aviation Program. It includes \$14.2 million for Manufacturing Methods and Technology Program (MM&T). MM&T request will allow completion of effort on composite structures for the tail rotor, tail section and main rotors of Army helicopters. Heavy effort of improved methods for manufacturing gas turbine engines continues with emphasis on turbine blades and compressor components. The Provision of Industrial Facilities (PIF) request provides for rehabilitating real property and industrial plant equipment at the Stratford, Conn. Army Engine Plant (AVCO Lycoming), and other projects (\$11.5 million). Depot Maintenance Plant Equipment (DMPE) request provides for facilitization of Corpus Christi, TX Army Depot to assume overhaul of T-700 engine, turbine fuel controls, BLACK HAWK airframe repair and installation of environment control equipment at the Depot (\$10.2 million).

War Consumables - \$7.0 million is requested for 7 and 19 tube 2.75 inch Lightweight Rocket launchers to be used on the AH-1 COBRA/TOW and AH-64 attack helicopters.

Aviation Night Vision Goggles - \$5.9 million is requested for procurement of the aviators Night Vision Imaging System (ANVIS) which is a lightweight, helmet mounted, high performance aviator goggle system for helicopter night operations including nap-of-the Earth (NOE) flight under overcast starlight conditions. The system employs a third generation image intensifier assembly.

FORMAT J-1

Department of the Army Annual Budget Estimate JUSTIFICATION	Appropriation Aircraft Procurement, Army	FY 1982 Budget
	(Thousands of Dollars)	
		Estimate
		FY 1983
Budget Program or Budget Project Account Activity 4 - Support Equipment and Facilities		
Direct Obligation or Direct Budget Plan Direct Obligations		\$147,800

Section 1 - PURPOSE AND SCOPE

Provides for avionics support equipment including avionics spares support and avionics communications equipment; for common ground equipment including tool sets, shop sets and components thereof, aviation ground support equipment, flight simulators; for aviation night vision goggles; for industrial facilities; and for war consumables.

Section 2 - JUSTIFICATION OF FUNDS REQUESTED

The request for this activity is comprised of the following items:

Avionics Support Equipment - \$11.8 million is requested as follows: \$7.6 million for procurement of avionics spares and \$4.2 million for Position Locating Reporting Systems (PLRS) and Single Channel ground and airborne radio system (SINCGARS).

Aviation Night Vision Goggles - \$34.0 million is requested for continuation of procurement of the Aviators Night Vision Imagery System, a lightweight, helmet mounted, high performance aviator goggle system for helicopter night operation including nap-of-the-Earth (NOE) flight under overcast starlight conditions. The system employs a third generation image intensifier assembly.

Common Ground Equipment - \$59.9 million is requested as follows: Tools and Shop Sets, Aviation Ground Support Equipment, Flight Simulators, and Individual items costing less than \$.9 million. Tools and Shop Sets include aviation unit and intermediate maintenance shop sets, maintenance shelters to provide urgently needed equipment to fill the 3 level maintenance system (\$4.6 million). Aviation Ground Support Equipment include self propelled crane, aircraft maintenance trailers, and engine adapter assembly (\$3.9 million). The AH-1 Flight/Weapons Simulator provides visual and instrument flight and gunnery simulation capable of independent or integrated crew training (2 for \$35.0 million). The CH-47 Flight Simulator provides automated training capability of visual and instrument flight and emergency procedures training (1 for \$12.3 million). Individual items costing less than \$.9 million are test equipment for maintenance of avionics, airborne surveillance and Air Traffic Control hardware (\$4.1 million).

Industrial Facilities - \$35.7 million is requested as follows: \$11.2 million for Provisions of Industrial Facilities (PIF), \$8.5 million for Depot Maintenance Plant Equipment (DMPE), and \$16.0 million for Manufacturing Methods and Technology (MM&T).

FORMAT A

Department of the Army Annual Budget Estimate JUSTIFICATION		FY 1982 Budget
Appropriation	Budget Program or Budget Project Account	
Aircraft Procurement, Army	Activity 4 - Support Equipment and Facilities	

FY83 programs are on-going and continues projects which began in prior years.

War Consumables - \$6.4 million is requested to procure 7 and 19 tube 2.75 inch Lightweight Rocket launchers for the AH-1S COBRA/TOW and AH-64 attack helicopter.

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AIRCRAFT PROCUREMENT, ARMY

Section 5

Comparison of FY 1981 program requirements as reflected in FY 1981 budget with FY 1981 program requirements as shown in FY 1982 budget.

Comparison of FY 1981 financing as reflected in FY 1981 budget with FY 1981 financing as shown in FY 1982 budget.

Comparison of FY 1980 program requirements as reflected in FY 1981 budget with FY 1980 program requirements as shown in FY 1982 budget.

Comparison of FY 1980 financing as reflected in FY 1981 budget with FY 1980 financing as shown in FY 1982 budget.

COMPARISON OF BY 1981 PROGRAM REQUIREMENTS
AS REFLECTED IN FY 1981 BUDGET WITH
FY 1981 PROGRAM REQUIREMENTS AS SHOWN IN FY 1982 BUDGET
SUMMARY OF REQUIREMENTS (In Thousands of Dollars)

Appropriation	Total Program Requirements Per FY 81 Budget	Program Requirements Per FY 1982 Budget	Increase (+) or Decrease (-)
Aircraft Procurement, Army			
Activity 1 - <u>Aircraft</u>	348,400	466,100	+ 117,700
Activity 2 - <u>Modification of Aircraft</u>	396,300	417,000	+ 20,700
Activity 3 - <u>Spares and Repair Parts</u>	126,500	138,700	+ 12,200
Activity 4 - <u>Support Equipment and Facilities</u>	54,100	54,600	+ 500
	925,300	1,076,400	+ 151,100

Explanation by Activity

Activity 1 - Aircraft - Increase is due to Congressional action to procure 6 C-12 aircraft (+\$9,000); 17 AH-1S helicopter (+ \$44,500); additional funding to procure 80 UH-60A helicopters (+ \$61,200); and Army additional funds for inflation (+ \$3,000).

Activity 2 - Modification of Aircraft - Increase is due to Congressional action to modify TH-1G trainers to the modernized TH-1S Configuration (+ \$17,200) and Army additional funds for inflation (+ \$ 3,500).

Activity 3 - Spares and Repair Parts - Increase is due to Congressional action to increase initial spares support for AH-1S and UH-60A (+ \$11,100) and Army additional funds for inflation (+ \$1,100).

Activity 4 - Support Equipment and Facilities - Increase is due to Army additional funds for inflation (+ \$500).

**COMPARISON OF FY 1981 FINANCING AS REFLECTED
IN THE FY 1981 BUDGET WITH FY 1981 FINANCING AS SHOWN
IN FY 1982 BUDGET**

(In Thousands of Dollars)			
Appropriation	Financing Per FY 1981 Budget	Financing Per FY 1982 Budget	Increase (+) or Decrease (-)
Aircraft Procurement, Army			
Program Requirements, (Total)	1,008,900	1,108,400	+99,500
Program Requirements (Service Account)	(933,400)	(1,076,400)	(+143,000)
Program Requirements (Reimbursable)	(75,500)	(32,000)	(-43,500)
Less:			
Anticipated reimbursements	75,500	32,000	-43,500
Reprogramming from prior year budget plans	-	-	-
Unobligated balance available from prior year to finance new budget plans	-	-	-
Unobligated balance transferred from other accounts	-	-	-
Add:			
Unobligated balance transferred to other accounts	-	-	-
Unobligated balance available to finance subsequent year budget plans	-	-	-
BUDGET AUTHORITY	933,400	1,076,400	+143,000
BUDGET AUTHORITY			
Appropriation	933,400	1,076,400	+143,000

EXPLANATION OF CHANGES IN FINANCING

Increase to Appropriation Budget Authority is a result of the following Congressional actions taken on the FY81 Budget Request: +\$9.0 million for 6 C-12 aircraft; +\$44.5 million for 17 AH-1S helicopters; +61.2 million for UH-60A helicopters; +17.2 million for TH-1G/S modifications; and \$11.1 million for initial spares support to AH-1S and UH-60A helicopters.

COMPARISON OF FY 1980 PROGRAM REQUIREMENTS
AS REFLECTED IN FY 1981 BUDGET WITH
FY 1980 PROGRAM REQUIREMENTS AS SHOWN IN FY 1982 BUDGET

SUMMARY OF REQUIREMENTS (In Thousands of Dollars)			
Appropriation:	Total Program Requirements	Program Requirements	Increase (+) or Decrease (-)
Aircraft Procurement, Army	Per FY 81 Budget	Per FY 1982 Budget	
Activity 1 - Aircraft	398,100	398,000	- 100
Activity 2 - Modification of Aircraft	420,137	419,109	-1,028
Activity 3 - Spares and Repair Parts	71,600	70,800	- 800
Activity 4 - Support Equipment and Facilities	62,300	58,258	-4,042
	952,137	946,167	-5,970

Explanation

\$2,200 thousand-inflation not approved by Congress.

\$3,770 thousand-reprogrammed to MPA.

\$5,970 thousand

COMPARISON OF FY 1980 FINANCING AS REFLECTED
IN THE FY 1981 BUDGET WITH FY 1980 FINANCING
AS SHOWN IN FY 1982 BUDGET

(In Thousands of Dollars)

Appropriation:	Financing Per FY 1981 Budget	Financing Per FY 1982 Budget	Increase (+) or Decrease (-)
Aircraft Procurement, Army			
Program Requirements, (Total)	1023,537	973,362	-50,175
Program Requirements (Service Account)	(952,137)	(946,167)	(-5,970)
Program Requirements (Reimbursable)	(71,400)	(27,195)	(-44,205)
Less:			
Anticipated reimbursements	71,400	27,195	-44,205
Reprogramming from prior year budget plans	-	-	
Unobligated balance available from prior year to finance new budget plans	-	-	
Unobligated balance transferred from other accounts	-	-	
Add:			
Unobligated balance transferred to other accounts	-	-	
Unobligated balance available to finance subsequent year budget plans	-	-	
<u>BUDGET AUTHORITY</u>	<u>952,137</u>	<u>946,167</u>	<u>-5,970</u>
BUDGET AUTHORITY			
Appropriation	961,837	961,837	0
Transfers to other accounts	-9,700	-15,670	+5,970
Appropriation (Adjusted)	951,037	946,167	-5,970
<u>EXPLANATION OF CHANGES IN FINANCING</u>			
- \$2,200 thousand - inflation not approved by Congress			
- 3,770 thousand - reprogrammed to MPA			
- \$5,970 thousand - TOTAL			

AIRCRAFT PROCUREMENT, ARMY

Section 6

Selected Data Sheets

NOT USED

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AIRCRAFT PROCUREMENT, ARMY

Section 7

Analysis of Unobligated Balances

1-36 - 1/15/81

AIRCRAFT PROCUREMENT, ARMY

Analysis of Unobligated Balances - FY 1982 Program* Summary by Category

<u>Category</u>	Estimated Unobligated Dollars (Millions)	% of total Unobligated
1. Reserved to support contracts	\$223.2	74.0%
2. Engineering changes	36.2	12.0%
3. Other	42.2	14.0%
Total Unobligated FY 1982	\$301.6	100%

Explanation by Category

Based on past experience, it is predicted that the above amounts will remain unobligated at the end of FY 82. Reasons for the unobligated balances here have been grouped into three general categories and are detailed below. These unobligated amounts will therefore be required in subsequent fiscal years to complete the procurement of the FY 82 program.

1. Reserved to Support Contracts:

- a. Held pending award of firm contracts as opposed to letter orders.
- b. Amounts reserved for incentive contract payments.
- c. Reimbursements to be made to the Army Stock Fund for short leadtime materiel purchase as Government-furnished equipment for producers.
- d. Amounts held to support Product Improvement Programs; modification for retrofit during production; modifications ordered by customers.
- e. Contractor claims, reserves to cover potential liabilities for contracts containing escalation clauses for labor or materiel cost increases and price redeterminations.
- f. Contract close-out costs; packing, crating, handling and packaging and loading charges.
- g. Government-furnished equipment breakout procurements; federal excise tax and sales tax payments; preparation of manuals and technical data and reserve for completion of construction elements of production base support facilities projects.
- h. Delay due to design or testing difficulties.
- i. Award protests.
- j. Insufficient procurement detail involving reimbursable orders.
- k. Develop adequate competitive procurement or technical data package.
- l. Items released to Army by other customers too late to permit obligation in FY 1982.

*Includes estimated FY 81 carry-over and other customer reimbursable programs.

AIRCRAFT PROCUREMENT, ARMY (Continued)

2. Engineering Changes:

- a. Engineering costs in support of production (obligated only as expenses are incurred).
- b. Validated engineering change orders to be incorporated into the current manufacturing process.
- c. Engineering changes as a result of acceptance testing, destructive and proving ground tests.
- d. Amounts reserved to support engineering change proposals and value engineering proposals.

3. Other:

- a. Changes to the previously planned method of procurement (i.e. competitive in lieu of sole source).
- b. Extension to bid opening dates.
- c. Additional time required to complete audits of cost data and obtain contractor cost data.
- d. Unfavorable pre-award surveys and extended negotiations.
- e. Held pending validation of production capability of low bidder.
- f. Attaining a satisfactory production rate prior to awarding additional work.

Aircraft Procurement, Army

Section 8

Modification of Aircraft

Page Number

Modification Summary Sheets

Exhibits P-3a

OV-1 MOHAWK	1 - 44
RC-12 GUARDRAIL	1 - 76
RV-1 AIRPLANE, RECONNAISSANCE	1 - 85
AH-1 COBRA	1 - 108
CH-47 CHINOOK	1 - 120
C-12 AIRPLANE, CARGO	1 - 130
EH-1 HELICOPTER, ELECTRONIC	1 - 135
OH-58 KIOWA	1 - 139
AIRBORNE AVIONICS	1 - 145

CONSOLIDATED P-3a EXHIBIT

P-3a exhibits for modifications which are to be applied to several different aircraft in FY 82/83 are included as follows:

<u>Modification</u>	<u>Aircraft to which applicable in FY 82/83</u>	<u>Page Number</u>
AN/APR 39(V)1 Radar Warning Receiver	OV-1	1 - 65
AN/AVR-2 Laser Warning Receiver	AH-1S	1 - 118
NOE Communications	OH-58, AH-1S	1 - 140
AN/APR-44 Continuous Wave (CW) Radar Warning Receiver	OV-1, RV-1	1 - 60
AN/ALQ-156 Missile Detector System	CH-47, EH-1	1 - 136
AN/ALQ-162(V)2 Continuous Wave (CW) Radar Jammer	RV-1, RC-12	1 - 82
XM-130 General Purpose Dispenser	OV-1	1 - 72
R-1963 Glide Slope/Marker Beacon	OV-1, RV-1	1 - 101
AN/ARC-164 Radio	OV-1, RV-1	1 - 104

Aircraft Modification, Army
FY 82 President's Budget

Aircraft (Dollars in Thousands)

OV-1 MOHAWK

	<u>82</u>		<u>83</u>	
	<u># Acft</u>	<u>Cost</u>	<u># Acft</u>	<u>Cost</u>
Conversion Program	4	13,811.3	2	7,257.4
UPD-7A Data Link/E-SCAN	-	300.0	20	15,100.0
Hot Metal + Plume Suppressor	-	500.0	-	540.1
Stall Warning System	2	12.3	106	1236.6
Propeller Reversing Control	148	260.4	-	-
*XM-130 General Purpose Dispenser	-	56.0	-	58.3
*ARC-164 UHF Radio Receiver	-	49.0	-	55.2
*APR-39(V)1 Radar Warning Receiver	-	75.0	-	60.8
*APR-44 CW Radar Warning Receiver	-	66.0	-	71.7
*R-1963 Glide Slope Receiver	-	159.0	-	171.8
ALQ-147(V)1 Countermeasure Set	6	70.0	6	75.7
APS-94F Radar	6	141.0	6	152.4
TOTAL OV-1		15,500.0		24,800.0

RV-1D

QUICK LOOK II Conversion	2	5,001.1	-	155.4
USQ-61 Digital Data Set	-	8.2	-	-
*R-1963 Glide/Slope Receiver	-	9.2	-	-
ALQ-147A(V)2 Countermeasure Set	-	21.4	-	-
*ALQ-162 CW Radar Jammer	-	-	18	2,483.7
Propeller Reversing Control	-	49.0	-	-
ALQ-133 Inflight Readout Device	28	2,653.6	-	-
ALQ-133 Mag Tape Recorder	28	2,143.3	-	-
*APR-44 CW Radar Warning Receiver	-	10.2	-	-
*ARC-164 Radio	-	4.1	-	-
Stall Warning System	-	-	-	258.9
TOTAL RV-1		9,900.0		2,900.0

*Consolidated P-3a

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Aircraft Modification, Army
FY 82 President's Budget

Aircraft (Dollars in Thousands)

	82		83	
	# Acft	Cost	# Acft	Cost
<u>AH-1S</u>				
FACTS/ITMS	-	-	-	79,115.0
Wire Strike Protection System	484	2,366.0	483	2,551.0
Improved Attitude Heading Reference System	18	1,066.0	78	3,300.0
AN/ALQ-136 Radar Jammer	-	22,312.0	-	20,649.0
Laser Warning Receiver	100	5,647.0	235	5,953.0
*NOE Communication	150	1,709.0	418	5,625.0
	TOTAL AH-1S	33,100.0		117,193.0
<u>CH-47</u>				
Fiberglass Rotor Blades	92	28,262.0	20	7,825.0
Engine Conversion	55	15,609.0	79	24,075.0
*AN/ALQ-156 Missile Detector System	-	8,629.0	-	-
Modernization Program	10	130,000.0	15	195,500.0
	TOTAL CH-47	182,500.0		227,400.0
<u>C-12A</u>				
Engine Conversion	23	550.0	11	281.0
Auto Feather/Auto Sync	23	288.0	11	147.0
	TOTAL C-12A	838.0		428.0
<u>EH-1</u>				
*ALQ-156 Missile Detector System	30	2,400.0	-	-
	TOTAL EH-1	2,400.0		-
*Consolidated P-3a		1-42- 1/15/80		

Aircraft Modification, Army
FY 82 President's Budget

Aircraft (Dollars in Thousands)

	82		83	
	<u># Acft</u>	<u>Cost</u>	<u># Acft</u>	<u>Cost</u>
<u>OH-58</u>				
*Imp VHF-FM NOE Communications	-	-	130	1,800.0
*UHF Side Band NOE Communications	108	<u>1,600.0</u>	138	<u>8,800.0</u>
TOTAL OH-58		1,600.0		10,600.0
<u>Airborne Avionics</u>				
APN-209 Radar Altimeter	-	3,592.0	-	42.0
Imp MK-1564/AR Head Set	-	55.0	-	60.0
MK-994 Test Cables	-	178.0	-	-
FPN-40 Solid State	-	-	-	2,913.0
RT 1254	-	-	-	1,220.0
LDNS Improved Reliability	-	<u>475.0</u>	-	<u>865.0</u>
TOTAL Airborne Avionics		4,300.0		5,100.0
<u>RC-12D</u>				
Airplane, Recon RC-12D	8	51,456.0	-	-
BIC Integration	4	1,244.0	-	-
ALQ-162 CW Radar Jammer	-	-	17	1,437.0
TOTAL RC-12D		52,700.0		1,437.0

*Consolidated P-3a

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ACTIVITY 2 - AIRCRAFT MODIFICATIONS					EXHIBIT P-3	
Reports Control Symbol DD-COMP(AR) 1092						
APPROPRIATION: APA/2 (SSN AZ3530)					Date: 11 Dec 80	
MODEL: OV-1D MOHAWK MODIFICATION (1)	FY 19 81		FY 19 82		FY 19 83	
	Quantity (2)	Amount (Thousands) (3)	Quantity (4)	Amount (Thousands) (5)	Quantity (6)	Amount (Thousands) (7)
OV-1 Conversion Program		703.0	4	13,811.3	2	7,257.4
Hot Metal & Plume Suppressor	19	2,477.0		500.0		540.1
**AN/UPD-7A (RAM) Data Link, Improved		4,831.0				
Propeller Reversal Control			148	260.4		
*XM-130 General Purpose Dispenser (page 1-77)		513.0		56.0		58.3
Stall Warning System			2	12.3	106	1,236.6
*AN/APR-39 Radar Warning Receiver (page 1-65)		150.0		75.0		80.8
OTHER:						
*AN/APR-44 CW Radar Warning Receiver (page 1-60)		226.0		66.0		71.7
*R-1963/ARN GS/MB Receiver (page 1-101)				159.0		171.8
AN/ALQ-147(V)1 Countermeasure Set			6	70.0	6	75.7
AN/APS-94F Radar			6	141.0	6	152.4
*AN/ARC-164 UHF/AM Radio (page 1-104)				49.0		55.2
AN/UPD-7A (DATA LINK/E-SCAN)					20	15,100.0
				300.0		
TOTAL		8,900.0		15,500.0		24,800.0
*Consolidated P-3a **P-3a not included. No FY 82/83 Funds.						

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CLASSIFICATION

REPORTS CONTROL SYMBOL
DD-COMP (AR) 1092

AIRCRAFT MODIFICATION

DATE 11 Dec 80

APPROPRIATION/BUDGET ACTIVITY
A PA/2 (SSN AZ3530)MODIFICATION TITLE AND NO.
OV-1D Conversion, PIP #1-72-01-0001

AIRCRAFT AFFECTED: OV-1B, C

DESCRIPTION/JUSTIFICATION: Type of Improvement - Operational Capability. This modification program will modernize the older OV-1C aircraft to a standard OV-1D configuration to accept the palletized and improved Infrared (IR) and Side Looking Airborne Radar (SLAR) packages, thus, increasing the operational capability and flexibility of the OV-1 aircraft. The improved sensor will allow a single converted aircraft to be interchanged to fly either IR or SLAR mission, thereby increasing the surveillance capability of the aircraft.

Airframe changes will include additional airframe components of the OV-1D configuration, i.e., increased strength landing gear; increased horsepower engine and matching propellers; addition to two fuselage access doors.

Currently the Army has in operation for surveillance the older model OV-1B equipped only for SLAR and older Model OV-1C which have only the capability for IR. FY 82-84 program will modernize the OV-1B models to the OV-1D configuration, in order to provide the Army with an all OV-1D fleet.

DEVELOPMENT STATUS:

Preproduction Prototype Completed - December 1968

Engineering/Service Tests Completed - June 1971

Type Classified Standard - September 1972

MILESTONES:	FY 73 EST DATE	FY 80 EST DATE	FY 81 EST DATE	FY 82 EST DATE	FY 83 EST DATE	FY 84 EST DATE
PIP Approval	Feb 73					
Contract Award	May 73	May 80		Dec 81	Dec 82	Dec 83
Leadtime for Airframe	14 Month average					
Prod Rate for A/C	(See installation schedule)					
Delivery Starts	Aug 74	2Q 81		2Q82	2Q83	2Q84

CRSIS Form
1 Apr 78

2075

Edition of 1 May 78, may be used.

P-1 SHOP LIST PAGE NO

1-45 - 1/15/81

CLASSIFICATION

CI-12/02/80

EXHIBIT P-3a

BASIS: FOR COST ESTIMATE: Amounts in thousands of dollars.

	PRIOR YRS		FY 80		FY 81		FY 82		FY 83		FY 84		FY 85		FY 86		TOTAL PROGRAM	
	QTY	COST	QTY	COST	QTY	COST	QTY	COST	QTY	COST	QTY	COST	QTY	COST	QTY	COST	QTY	COST
GSE Flyaway		85.0		29.0		703.0												817.0
A/C GFE		13,869.0		1,317.0				1,629.3				6,200.6		387.5				23,403.4
AN/AYA-10	58	3,869.0	6	2,048.0														3,869.0
AN/ASN-86	58	14,087.0					7	2,753.4	5	1,926.3			2	1,049.3	1	736.8	79	22,600.8
AN/APS-94D	37	12,777.0		0													37	12,777.0
AN/AAS-24	13	4,301.0															13	4,301.0
Avionics/Mission		6,059.0		176.0				2,891.2		1,542.1		1,278.3						11,946.0
Non-Recur		2,000.0		0														2,000.0
APA A/F Conv	55	29,772.0	7	8,145.0			4	6,537.4	2	3,789.0	7	14,921.1	2	5,263.2	2	6,063.2	79	74,490.9
(OMA)		(213.0)						(1,740.0)		(650.0)		(3,123.0)		(670.0)		(700.0)		(7,096.0)
PROJECT FINANCIAL PLAN	55	86,819.0	7	11,715.0		703.0	4	13,811.3	2	7,257.4	7	22,400.0	2	6,700.0	2	6,800.0	79	159,205.7

METHOD OF IMPLEMENTATION: Installation will be accomplished at the contractor's plant on a production line basis.

KIT DELIVERY SCHEDULE: Not applicable

INSTALLATION SCHEDULE:

	FY 73				FY 74				FY 75				FY 76				FY 77		FY 78				FY 79				FY 80			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4		
Inductions	4					3			3	2	3	3	3	3	4	3	1	3		4	2	2	2	2		1	2	3		
Completions					4					3			3	2	3	3	3	3	4	3	1	3		4	2	2	2	2		
	FY 81				FY 82				FY 83				FY 84				FY 85				FY 86				FY 87					
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4		
Inductions								2					1	2	2	2	2			2										
Completions		3	3						1	1	2			2			1	2	2	2	2				2					

CLASSIFICATION

REPORTS CONTROL SYMBOL
DD-COMP (AR) 1092

AIRCRAFT MODIFICATION

DATE
11 Dec 80APPROPRIATION/BUDGET ACTIVITY
APA/2 (SSN AZ3530)

MODIFICATION TITLE AND NO.

Hot Metal Plus Plume Suppressor, TIP #1-75-01-0302

AIRCRAFT AFFECTED: OV-1D

DESCRIPTION/JUSTIFICATION: Type of Improvement - Operational Capability. The Hot Metal Plus Plume Suppressor is an engine nacelle/exhaust modification which reduces the infrared (IR) signature by using RAM air for cooling exhaust duct wall surfaces (hot metal) and exhaust gases (plume dilution). The suppressor system consists of airframe mod kit provisions, including covers for use in unsuppressed configuration; louvered scarfed shroud suppressor assembly (B Kit); and static covers for each engine. The IR suppressor system is required to complement the AN/ALQ-147() IR Jammer to defeat the growth threats, and will become mission essential in operations against growth threat.

DEVELOPMENT STATUS: Engineering development contract was awarded Jun 75, ED prototype fabricated APR 76. Contractor developmental testing and government effectiveness (IR measurements) testing is complete. Government endurance (RAM) testing was completed May 78, A TECOM Independent Evaluation Report was issued Jul 78. The ECP for the airframe provisions was approved Apr 77, and contract mod for incorporating provisions during the conversion program was awarded Aug 77.

MILESTONES:

FY 77 EST DATE	FY 78 EST DATE	FY 79 EST DATE	FY 80 EST DATE	FY 81 EST DATE	FY 82 EST DATE
-------------------	-------------------	-------------------	-------------------	-------------------	-------------------

Pdn Contr Awd (Leadtime):

Airframe Provisions	Aug 77	Feb 78 (5 mo)	Feb 79 (5 mo)	MAY80 (5 mo)	
Mod Kits				JUL80 (7 mo)	1Q 81 (5 mo)
Suppressor B Kit		Sep 78 (13 mo)	Dec 78 (13 mo)	SEP80 (9 mo)	1Q 81 (9 mo)

Delivery Starts:

Mod Kits				4Q80	3Q 81
Suppressor B Kit			2Q 80	3Q81	4Q81

Installation Starts:

Mod Kits				1Q81	4Q 81
Suppressor B Kit	(Installed on a mission required basis)				

DD FORM 1
1 Apr 78

2075

Edition of 1 May 76, may be used.

P-1 SHOPP LIST PAGE NO.

1-47 - 1/15/81

CLASSIFICATION

EXHIBIT P. 3a

OV-1D HOT METAL PLUS PLUME SUPPRESSOR
PIP # 1-75-01-0302

PROJECT FINANCIAL PLAN: (Amounts in thousands of dollars)

PRIOR	FY 80	FY 81	FY 82	FY 83	FY 84	TOTAL PROGRAM
QTY COST	QTY COST	QTY COST	QTY COST	QTY COST	QTY COST	QTY COST
21 4,080.0	30 5,602.0	19 2,477.0	500.0	540.1	237.7	70 13,436.8

BASIS FOR COST ESTIMATE: (Amounts in thousands of dollars)

	PRIOR YRS	FY 80	FY 81	FY 82	FY 83	FY 84	TOTAL PROGRAM
	QTY COST	QTY COST	QTY COST	QTY COST	QTY COST	QTY COST	QTY COST
<u>Non-Recurring:</u>							
Airframe Provisions		285.0					285.0
Mod Kits		473.0					473.0
Suppressor B Kits		769.0					769.0
<u>Recurring:</u>							
Airframe Provision	24 744.0	13 405.0	6 225.0	12 500.0	12 540.1	5 237.7	72 2,651.8
Mod Kits		36 1,671.0					36 1,671.0
Suppressor B Kits	21 1,809.0	30 3,526.0	19 2,252.0				70 7,587.0
<u>Application:</u>							
Mod Kits (OMA-2207)			(382.0)	(413.0)			(795.0)
TOTAL APA	21/4,080.0	30/5,602.0	19/2,477.0	500.0	540.1	237.7	70 13,436.8

METHOD OF IMPLEMENTATION: Installation of 60 airframe provisions will be incorporated during the OV-1 cyclic overhaul and conversion programs beginning with the FY 77 funded delivery aircraft. The balance of the airframe modifications will be accomplished by contractor personnel at contract facility. Installation for application of airframe provisions is estimated at 400 man-hours. The suppressor B Kit is to be provided to the field and installed on a mission required basis. Installation time for the B Kit is estimated at 9 man-hours by AVUM level personnel.

KIT DELIVERY SCHEDULE:

FY 81	FY 82	FY 83	FY 84	FY 85	FY 86
1 2 3 4	1 2 3 4	1 2 3 4	1 2 3 4	1 2 3 4	1 2 3 4
6 6 6 8	3 3 3 2	3 2 2 2	3 3 3 3	3 1 1 1	1 1

INSTALLATION SCHEDULE:

FY 81	FY 82	FY 83	FY 84	FY 85	FY 86
1 2 3 4	1 2 3 4	1 2 3 4	1 2 3 4	1 2 3 4	1 2 3 4
6 6 6 8	3 3 3 2	3 2 2 2	3 3 3 3	3 1 1 1	1 1

CLASSIFICATION

REPORTS CONTROL SYMBOL
DD COMP (AR) 1092

AIRCRAFT MODIFICATION

DATE 11 Dec 80

APPROPRIATION/BUDGET ACTIVITY
APA/2 (SSN AZ3530)MODIFICATION TITLE AND NO.
Propeller Reversing Control, PIP #1-79-01-1018

AIRCRAFT AFFECTED: OV-1D

DESCRIPTION/JUSTIFICATION: Type of Improvement - Flight Safety. The proposed modification will improve flight safety by insuring simultaneous reversal of both propellers during the landing roll. The existing propeller reversing control circuitry has an established history of wire breakage at the propeller reversing switches mounted on the power level quadrants. Failure of either left or right circuit may cause loss of aircraft direction control. An OV-1 will be prototyped and flight tested to verify suitability of the proposed modification.

DEVELOPMENT STATUS:

Initiate Phase 1 Engineering -NOV 79 (Accomplished)

MILESTONES:FY 82FY 83

Contract Award

1Q82

Delivery Start

4Q82

Kit Installation Start

1Q83

Kit Installation Complete

1Q83

PROJECT FINANCIAL PLAN: (Amounts in thousands of dollars)

FY 82		FY 83		TOTAL	
QTY	AMT	QTY	AMT	QTY	AMT
148	260.4			148	260.4

Exhibit P-3a
Page 2 of 2

BASIS FOR COST ESTIMATE: (Amounts in thousands of dollars)

	FY 82	FY 83	FY 84	FY 85	TOTAL PROGRAM
	QTY COST	QTY COST	QTY COST	QTY COST	QTY COST
Kits	148 260.4				148 260.4
Installation (OMA)		24 (95.3)	96 (458.0)	27 (140.0)	147 (693.7)
TOTAL	148 260.4				148 260.4 1/

METHOD OF IMPLEMENTATION:

130 Modification Kits will be installed at DS Maintenance. 17 Kits will be installed during conversion.

KIT DELIVERY SCHEDULE:

FY 82				FY 83				FY 84			
1	2	3	4	1	2	3	4	1	2	3	4
<u> </u>				<u> </u>				<u> </u>			
40				91 16							

KIT INSTALLATION SCHEDULE:

FY 83	FY 84	FY 85
<u>1 2 3 4</u>	<u>1 2 3 4</u>	<u>1 2 3 4</u>
24	24 24 24 24	24 3

1/ **Prototype and 147 installations**

CLASSIFICATION

REPORTS CONTROL SYMBOL DD-COMP (AR) 1002		AIRCRAFT MODIFICATION		DATE 10 Dec 80																																																										
APPROPRIATION/BUDGET ACTIVITY APA/2 (SSN AZ2100)		MODIFICATION TITLE AND NO. STALL WARNING SYS, PIP # 1-82-01-1015																																																												
<u>AIRCRAFT AFFECTED:</u> OV-1D <u>DESCRIPTION/JUSTIFICATION:</u> Type of Improvement - Mission Safety. This is a directed safety-of-flight modification which will retrofit the OV-1D aircraft with a stall warning system to alert the pilot of impending wing stall, thereby improving the OV-1 flight safety. <u>DEVELOPMENT STATUS:</u> Project Initiated (ECP Prototype/Award) - 2Q82 Testing - EMO/EMC and AQS - 2Q83 IPR/PROD Decision (ECP Approval) - 3Q83 <u>MILESTONES:</u> <table> <thead> <tr> <th></th> <th><u>FY 82</u> <u>EST DATE</u></th> <th><u>FY 83</u> <u>EST DATE</u></th> <th><u>FY 84</u> <u>EST DATE</u></th> <th><u>FY 85</u> <u>EST DATE</u></th> </tr> </thead> <tbody> <tr> <td>Procure Hdw for test</td> <td>2Q82</td> <td></td> <td></td> <td></td> </tr> <tr> <td>Production Contract Award (HDW)</td> <td></td> <td>3Q83</td> <td></td> <td></td> </tr> <tr> <td>Production Contract Award (AF Kits)</td> <td></td> <td>3Q83</td> <td></td> <td></td> </tr> <tr> <td>MOW Negotiated</td> <td></td> <td></td> <td>1Q84</td> <td></td> </tr> <tr> <td>First Pdn Hdw Delivered</td> <td></td> <td></td> <td>1Q84</td> <td></td> </tr> <tr> <td>First Pdn AF Kits Delivered</td> <td></td> <td></td> <td>1Q84</td> <td></td> </tr> <tr> <td>First Kit Applied</td> <td></td> <td></td> <td>2Q84</td> <td></td> </tr> <tr> <td>Last Kit Applied</td> <td></td> <td></td> <td></td> <td>1Q85</td> </tr> <tr> <td>Data Collection Eval Complete</td> <td></td> <td></td> <td></td> <td>2Q85</td> </tr> </tbody> </table> <u>PROJECT FINANCIAL PLAN:</u> (Amounts in thousands of dollars) <table> <thead> <tr> <th></th> <th><u>FY 82</u> <u>QTY</u> <u>AMT</u></th> <th><u>FY 83</u> <u>QTY</u> <u>AMT</u></th> <th><u>TOTAL</u> <u>QTY</u> <u>AMT</u></th> </tr> </thead> <tbody> <tr> <td></td> <td>2 12.3</td> <td>106 1,236.6</td> <td>108 1,248.9</td> </tr> </tbody> </table>						<u>FY 82</u> <u>EST DATE</u>	<u>FY 83</u> <u>EST DATE</u>	<u>FY 84</u> <u>EST DATE</u>	<u>FY 85</u> <u>EST DATE</u>	Procure Hdw for test	2Q82				Production Contract Award (HDW)		3Q83			Production Contract Award (AF Kits)		3Q83			MOW Negotiated			1Q84		First Pdn Hdw Delivered			1Q84		First Pdn AF Kits Delivered			1Q84		First Kit Applied			2Q84		Last Kit Applied				1Q85	Data Collection Eval Complete				2Q85		<u>FY 82</u> <u>QTY</u> <u>AMT</u>	<u>FY 83</u> <u>QTY</u> <u>AMT</u>	<u>TOTAL</u> <u>QTY</u> <u>AMT</u>		2 12.3	106 1,236.6	108 1,248.9
	<u>FY 82</u> <u>EST DATE</u>	<u>FY 83</u> <u>EST DATE</u>	<u>FY 84</u> <u>EST DATE</u>	<u>FY 85</u> <u>EST DATE</u>																																																										
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Last Kit Applied				1Q85																																																										
Data Collection Eval Complete				2Q85																																																										
	<u>FY 82</u> <u>QTY</u> <u>AMT</u>	<u>FY 83</u> <u>QTY</u> <u>AMT</u>	<u>TOTAL</u> <u>QTY</u> <u>AMT</u>																																																											
	2 12.3	106 1,236.6	108 1,248.9																																																											

STALL WARNING SYSTEM
PIP # 1-82-01-1015

BASIS FOR COST ESTIMATE: (Amounts in thousands of dollars)

	FY 82		FY 83		FY 84		FY 85		TOTAL	
	QTY	COST	QTY	COST	QTY	COST	QTY	COST	QTY	COST
APA:										
Stall Warning Kit	2	12.3	106	691.5					108	703.8
Airframe Kits			107	382.5					107	382.5
STE			10	32.7					10	32.7
Spares (Initial)			16	104.3					16	104.3
Non-Recurring				25.6						25.6
(OMA)										
Instln/Kit Application					(87)	(557.0)	(20)	(136.0)	(107)	(693.0)
TOTAL	2	12.3	107	1,236.6					107	1,248.9 ^{1/}

METHOD OF IMPLEMENTATION: Modification will be accomplished at direct support maintenance via MWO by Contractor Team.

KIT DELIVERY SCHEDULE:

FY 84				FY 85			
1	2	3	4	1	2	3	4
47	20	20	20				

INSTALLATION SCHEDULE:

FY 84				FY 85			
1	2	3	4	1	2	3	4
47	20	20		20			

^{1/} Spare Kit for Test

CLASSIFICATION

REPORTS CONTROL SYMBOL
DD COMP (AR) 1092

AIRCRAFT MODIFICATION

DATE

11 Dec 80

APPROPRIATION/BUDGET ACTIVITY

APA/2

MODIFICATION TITLE AND NO.

AN/ALQ-147A(V)1 Countermeasure Set 1-75-01-0827

AIRCRAFT AFFECTED: OV-1D

DESCRIPTION/JUSTIFICATION: Type of Improvement - Operational Capability. The AN/ALQ-147A(V)1 is an on-board device which can be programmed to defeat the guidance system of infrared guided missiles. The (V)1 is a shorter, lighter version of the basic AN/ALQ-147(V).

DEVELOPMENT STATUS: Initiate Phase I Engineering, Airframe Mar 78
ECP Approval Nov 78

MILESTONES:

FY 78

FY 79

FY 80

FY 82

FY 83

FY 84

Airframe Mod Kits Cont Awd

Jun 79

Prod Lead Time

4 months

Airframe Mod Kits Del Starts

Sep 79

Kit Installation Starts

Oct 79

AN/ALQ-147A(V)1 Prod Cont Awd

Jul 78

AN/ALQ-147(V)1 Prod Lead Time

14 months

AN/ALQ-147A(V)1 Del Starts

Oct 79

Conversion "B" to "D" Aircraft Contr Awd

May 80

1Q82

1Q83

1Q84

PROJECT FINANCIAL PLAN: (Amounts in thousands of dollars)

PRIOR YEARS		FY 80		FY 81		FY 82		FY 83		FY 84		TOTAL PROGRAM	
QTY	COST	QTY	COST	QTY	CGST	QTY	COST	QTY	COST	QTY	COST	QTY	COST
61	9,037.0	54	125.0			6	70.0	6	75.7	5	66.5	132	9,374.2

DRSTS C Form
1 Apr 78

2075

Edition of 1 May 76, may be used.

P-1 SHOPP LIST

PAGE NO.

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CLASSIFICATION

EXHIBIT P- 3a

AN/ALQ-147A(V)1 COUNTERMEASURE SET
PIP # 1-75-01-0827

Exhibit P3a
Page 2 of 2

BASIS FOR COST ESTIMATE: (Amounts in thousands of dollars)

	PRIOR YEARS		FY 80		FY 82		FY 83		FY 84		TOTAL PROGRAM	
	QTY	COST	QTY	COST	QTY	COST	QTY	COST	QTY	COST	QTY	COST
Non-Recurring		3,209.0		105.0								3,314.0
AN/ALQ-147(V) Sys	25	1,765.0									25	1,765.0
AN/ALQ-147A(V)1 Sys	25	3,181.0									25	3,181.0
Spec Test Equip	18	575.0									18	575.0
Airframe Mod Kits**	132	263.0									132	263.0
Conversion Instlns	6	44.0		20.0	6	70.0	6	75.7	5	66.5	23	276.2
Installation (OMA)	(55)	(109.0)	(54)	(.124)							(109)	(233.0)
TOTAL		9,037.0		125.0		70.0		75.7		66.5		9,374.2

METHOD OF IMPLEMENTATION: Airframe modification kits will be installed by depot contact teams during the OV-1C Conversion.

KIT DELIVERY SCHEDULE:

	FY 79				FY 80				FY 81	FY 82				FY 83	FY 84			
FIELD	1	2	3	4	1	2	3	4		1	2	3	4		1	2	3	4
2*					2	21	55	6	6					6				5

INSTALLATION SCHEDULE:

	FY 79				FY 80				FY 81			
Field	1	2	3	4	1	2	3	4	1	2	3	4
2*					2	21	55		6			

	FY 80				FY 82				FY 83				FY 84			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
C/D Conversion	1	3	2		1	3	2		1	3	2		1	3	2	

*Prototype/Proof Kit Installation

**OV-1D & RV-1D

1-54 - 1/15/81

CLASSIFICATION

REPORTS CONTROL SYMBOL
DD-COMP (AR) 1092

AIRCRAFT MODIFICATION

DATE 11 Dec 1980

APPROPRIATION/BUDGET ACTIVITY

APA/2 (SSN AZ3530)

MODIFICATION TITLE AND NO.

AN/APS-94F Radar, PIP #1-76-01-0807

AIRCRAFT AFFECTED: OV-1D

DESCRIPTION/JUSTIFICATION: Type of Improvement - Operational Capability. This modification will reduce the vulnerability of the AN/APS-94D Radar Surveillance set to jamming and other electromagnetic interference. Components of the AN/APS-94E will be modified and an additional "Black Box" containing auxiliary receiver assemblies and control circuitry will be installed in the OV-1D. This urgent product improvement program will enable the AN/APS-94 operator in the OV-1D to acquire and provide useful Side Looking Airborne Radar (SLAR) imagery to interpreters in spite of electromagnetic interference.

DEVELOPMENT STATUS: Aircraft prototype effort is continuing. Initial production contract for twenty (20) Electronic Counter Counter Measures (ECCM) conversion kits was awarded on 31 May 79. Preproduction models of APS-94F have been bench tested, flight tested, and undergone environmental qualification as part of first article test. Compatibility with the RAM improved UPD-7 Data Link and extended range capability will be demonstrated in flight tests scheduled for Aug 79, which will include users follow-on evaluation (FOE). TECOM will prepare an independent evaluation test (IET) of APS-94 following this series of tests. Reliability Acceptance Test (RAT) and Group C tests will be conducted on production models. Aircraft prototype verification and Electromagnetic Compatibility (EMC) tests will be conducted.

<u>MILESTONES:</u>	<u>FY 76</u>	<u>FY 77</u>	<u>FY 78</u>	<u>FY 79</u>	<u>FY 80</u>	<u>FY 81</u>	<u>FY 82</u>
Phase I Contract Award	Jun 76						
Special IPR		Mar 77					
Phase II Contract Award		Sep 77					
AN/APS-94 ECCM Kit Leadtime			12 mo				
ECP/Pubs/MWO Contract Award			Sep				
ECP Submittal				Sep 79			
ECP Approval				Sep 79			
Aircraft Kit Contract Award (Long Leadtime Parts)				Jun 79			
Aircraft Kit Leadtime			8 mo				
Aircraft Kit Production Rate			5 per mo				
Kit Installation Start					Sep 80		
Kit Installation Complete							4Q 82

DRSTS-C Form
1 Apr 78

2075

Edition of 1 May 76, may be used.

P-1 SHOPP LIST

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CLASSIFICATION

EXHIBIT P. 3a

AN/APS-94F RADAR
PIP # 1-76-01-0807

PROJECT FINANCIAL PLAN: (Amounts in thousands of dollars)

PRIOR		FY 80		FY 82		FY 83		FY 84		TOTAL	
QTY	AMT	QTY	AMT	QTY	AMT	QTY	AMT	QTY	AMT	QTY	AMT
1/ 2/											
3/	17,591.0	4/	20,159.0		141.0		152.4		161.2		38,204.6

- 1/ Phase I Engineering - 960.0
- 2/ Hardware for Prototype Testing - 7,586.0
- 3/ 20 APS-94 ECCM Kits, 25 Airframe Kits - 7,098.0
- 4/ 45 APS-94 ECCM Kits, 65 Airframe Kits

BASIS FOR COST ESTIMATE: (Amounts in thousands of dollars)

	PRIOR YRS		FY 80		FY 81		FY 82	
	QTY	AMT	QTY	AMT	QTY	AMT	QTY	AMT
AN/APS-94 ECCM Kits	20	5,989.0	45	16,081.0				
Aircraft Provisions								
Kits	25	700.0	65	1,468.0			6	141.0
Non-Recurring APA		10,902.0		2,610.0				
Provision Kit Instl (OMA)					(29)	(859.0)	(35)	(791.0)
TOTAL		17,591.0		20,159.0				141.0

	FY 83		FY 84		TOTAL PROGRAM	
	QTY	AMT	QTY	AMT	QTY	AMT
AN/APS-94 ECCM Kits					65	22,070.0
Aircraft Provision						
Kits	6	152.4	6	161.2	108	2,622.6
Non-Recurring APA						13,512.0
Provision Kit Instl (OMA) (15)		(349)			(79)	(1,999.0)
TOTAL APA		152.4		161.2		38,204.6

1-56 - 1/15/R1

AN/APS-94F RADAR
PIP # 1-76-01-0807

METHOD OF IMPLEMENTATION: Application of AN/APS-94 ECCM kits will be accomplished by the contractor team.
Application of aircraft provision kits will be accomplished by MWO at Depot.

<u>KIT DELIVERY SCHEDULE:</u>	FY 80				FY 81				FY 82				FY 83				
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	
AN/APS-94 ECCM Kits						5	10	9		6	6	6	6		6	6	5
Aircraft Provision Kits			11	11	12	12	11	11	11	11							
<u>INSTALLATION SCHEDULE:</u>	FY 80				FY 81				FY 82				FY 83				
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	
Aircraft Provision Kits						6	8	7	8	8	10	9	8	8	7		

CLASSIFICATION

 REPORTS CONTROL SYMBOL
 DD-COMP (AR) 1092

AIRCRAFT MODIFICATION

DATE 11 DEC 80

APPROPRIATION/BUDGET ACTIVITY

APA/2 (SSN AZ1530)

MODIFICATION TITLE AND NO.

AN/UPD-7A (Data Link/E-SCAN) PIP #1-79-01-1086

AIRCRAFT AFFECTED: OV-1D

DESCRIPTION/JUSTIFICATION: Type of Improvement - Operational Capability. This PIP consists of two distinct tasks entitled ESCAN (Electronic Scan) and ECCM Hardened data link. The E-SCAN task will provide a dramatic operational improvement to the current AN/UPD-7 surveillance system enabling the system to provide continuous coverage of the entire Corps area, increasing the range of coverage and hardening the radar to enable it to operate against the postulated ECM threat. The data link task will provide the AN/UPD-7 surveillance system with a data link hardened to operate against the postulated ECM threat.

DEVELOPMENT STATUS:

Organizational and Operational Concept	September 1980
Independent Analysis	September 1980
HQDA Decision Briefing	November 1980

MILESTONES:

	<u>FY 81</u>	<u>FY 82</u>	<u>FY 83</u>	<u>FY 84</u>	<u>FY 85</u>
Mini Cost & Operational Effectiveness Analysis	Jul 81				
Baseline Cost Estimate	Jul 81				
ECCM Proof of Principle	Jul 81				
HQDA Engineering Development Decision	Aug 81				
ED Contract Award		May 82			
ECCM Data Link Contract Award		May 82	Dec 83	Dec 83	
DT/OT II				Sep 84	Dec 84
Interim Initial Operating Capability					May 85

PROJECT FINANCIAL PLAN: (Amounts in thousands of dollars)

	<u>FY 82</u>		<u>FY 83</u>		<u>FY 84</u>		<u>FY 85</u>		<u>FY 86</u>		<u>TOTAL</u>	
	<u>Qty</u>	<u>Cost</u>	<u>Qty</u>	<u>Cost</u>	<u>Qty</u>	<u>Cost</u>	<u>Qty</u>	<u>Cost</u>	<u>Qty</u>	<u>Cost</u>	<u>Qty</u>	<u>Cost</u>
ECCM Data Link	0.3		20	15,100.0	45	34,200.0					65	49,600.0
E-SCAN								1,900.0*		800.0*		2,700.0
TOTAL	0.3			15,100.0		34,200.0		1,900.0		800.0		52,300.0

*Total estimated funding requirements for the E-SCAN PIP are \$59,600.0 in FY 84 and \$8,500 in FY 86

 DPMSC Form
 Apr 78

2075

Edition of 1 May 76, may be used.

P-1 SHOP LIST PAGE NO.

1-58 - 1/15/81

CLASSIFICATION

EXHIBIT P-3a

AN/UPD-7A (DATA LINK/E-SCAN)
PIP #1-79-01-1086

BASIS FOR COST ESTIMATE: (Amounts in thousands of dollars)

	FY 82	FY 83	FY 84	FY 85	FY 86	TOTAL
	Qty Cost	Qty Cost	Qty Cost	Qty Cost	Qty Cost	Qty Cost
<u>DDL - ECCM</u>						
Airborne Radio <u>1/</u>		26	26	9,547.9		26 9,547.9
Airborne System <u>2/</u>		20 5,147.2	19	7,523.3		39 12,670.5
Ground Radio <u>1/</u>			15	5,508.4		15 5,508.4
Ground Station		19 9,952.8	15	7,857.5		34 17,810.3
STE		14	14	3,762.9		14 3,762.9
LLT Hardware	300.0					300.0
<u>E-SCAN</u>						
LLT Hardware				1,900.0	800.0	2,700.0
TOTAL	300.0	15,100.0	34,200.0	1,900.0	800.0	52,300.0

METHOD OF IMPLEMENTATION: Modification Kits will be installed at Depot, 32/24/5 (air/ground/STE).

DELIVERY SCHEDULE:

	FY 84	FY 85	FY 86
	1 2 3 4	1 2 3 4	1 2 3 4
ECCM Data Link	6 6 6	6 10 10 10	11
E-SCAN			

INSTALLATION SCHEDULE:

	FY 84	FY 85	FY 86
	1 2 3 4	1 2 3 4	1 2 3 4
ECCM Data Link	3 6	10 10 6 10	20
E-SCAN			

CLASSIFICATION

FY 82 Budget Estimate

REPORTS CONTROL SYMBOL
DD-COMP (AR) 1092

AIRCRAFT MODIFICATION

DATE 11 Dec 80

APPROPRIATION/BUDGET ACTIVITY

APA/2

MODIFICATION TITLE AND NO.

AN/APR-44 Continuous Wave Radar Warning Receiver

PIP #1-77-01-1081(OV-1D), 1-77-01-1181(RV-1D),
1-78-01-1281(RU-21A,B,C,H), 1-77-01-1781(EH-1H/X)

AIRCRAFT AFFECTED: OV-1D (SSN: AZ3530)
 RU-21A,B,C,H (SSN: AZ2900)
 RV-1D (SSN: AZ2100)
 EH-1H/X (SSN: AZ1200)

DESCRIPTION/JUSTIFICATION: Type of Improvement - Operational Capability. The AN/APR-44 Radar Warning Receiver provides detection and crew warning of continuous wave emissions from hostile air-defense radar systems.

DEVELOPMENT STATUS:OV-1/RV-1DRU-21HRU-21A,B,CEH-1H,X

1st Phase Engrg Start
 Prototype (Airfr Kit) Complete
 ECP Approval

Jun 78
 Mar 79
 1Q 81

Jun 78
 Dec 78
 4Q 80

Jun 78
 Jun 79
 Apr 80

Jul 77
 Aug 77
 Sep 78

MILESTONES:FY 77FY 78FY 79FY 80

Contr Award, APR-44

Jul 79

Jul 79

Jul 79

4Q 80

Production Lead Time (months)

19

19

19

9

APR-44 Delivery Starts

2Q 81

2Q 81

2Q 81

3Q 81

RV-1D: Contr Awd, Mod Kits

1Q 81

Prod Lead Time (months)

9

Kit Delivery Starts

4Q 81

RU-21H: Contr Awd, Mod Kits

4Q 80

Prod Lead Time

6

Kit Delivery Starts

3Q 81

RU-21A,B,C: (Mod Kit Procurement integral with 1st Phase Engineering)

OV-1/EH-1: (Application of airframe kits is integral with aircraft conversion/mod programs).

DD FORM 1
1 Apr 78

2075

Edition of 1 May 76, may be used.

P-1 SHOPP LIST

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CLASSIFICATION

EXHIBIT P. 3a

AN/APR-44, Continuous Wave Radar
Warning Receiver

FY 82 Budget Estimate

Exhibit P-3a
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PROJECT FINANCIAL PLAN: (Amounts in thousands of dollars)

<u>FY 79 & PY</u>	<u>FY 80</u>	<u>FY 81</u>	<u>FY 82</u>	<u>FY 83</u>	<u>FY 84</u>	<u>TOTAL PROGRAM COST</u>
2,870.0	2,397.0	226.0	76.2	71.7	65.0	5,705.9

BASIS FOR COST ESTIMATE: (Amount in thousands of dollars)

	<u>FY 79 & PY</u>		<u>FY 80</u>		<u>FY 81</u>		<u>FY 82</u>		<u>FY 83</u>		<u>FY 84</u>		<u>TOTAL PROGRAM</u>	
	<u>QTY</u>	<u>COST</u>	<u>QTY</u>	<u>COST</u>	<u>QTY</u>	<u>COST</u>	<u>QTY</u>	<u>COST</u>	<u>QTY</u>	<u>COST</u>	<u>QTY</u>	<u>COST</u>	<u>QTY</u>	<u>COST</u>
OV-1														
Phase I Engr		277.0												277.0
APR-44 Sys	24	130.0	67	338.0									91	468.0
SM-756 STE	5	26.0	18	91.0									23	117.0
R-2098 Receiver			91	458.0									91	458.0
Data		175.0												175.0
1st Art. Test		139.0		299.0										438.0
Contr Conting		34.0												34.0
ECO Reserve				57.0										57.0
ERADCOM Spt				109.0										109.0
Airfr Prov (Conv)			7	36.0			4	66.0	6	71.7	7	65.0	24	238.7
Airfr Prov (Cyc)			6	31.0									6	31.0
Airfr Prov (Mod)			37	113.0	40	226.0							77	339.0
TOTAL		781.0		1,532.0		226.0		66.0		71.7		65.0		2,741.7

RV-1														
Phase I Engr		479.0												479.0
APR-44 Sys	14	76.0	13	65.0									27	141.0
SM-756 STE	3	15.0											3	15.0
R-2098 Receivers			27	136.0									27	136.0
Data		8.0												8.0
Contr Conting		15.0												15.0
ECO Reserve				85.0										85.0
ERADCOM Spt		226.0		24.0										250.0
Airfr Prov (Conv)	6		4	15.0			2	10.2					12	25.2
Mod Kits			14	73.0									14	73.0
TOTAL		819.0		398.0				10.2						1,227.2

AN/APR-44, Continuous Wave Radar
Warning Receiver

FY 82 Budget Estimate

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BASIS FOR COST ESTIMATE (continued):

RU-21 A,B,C,H	FY 79 & FY		FY 80		FY 81		FY 82		FY 83		FY 84		TOTAL PROGRAM	
	QTY	COST	QTY	COST	QTY	COST	QTY	COST	QTY	COST	QTY	COST	QTY	COST
Phase I Engr		153.0												153.0
APR-44 Sys	19	103.0	11	55.0									30	158.0
SM-756 STE	4	20.0											4	20.0
R-2098 Receivers			30	151.0									30	151.0
Data		137.0		64.0										201.0
Contr Conting		35.0												35.0
ECO Reserve				48.0										48.0
ERADCOM Spt		23.0		50.0										73.0
ECAC Spt		16.0												16.0
Mod Kits			19	99.0									19	99.0
TOTAL		487.0		467.0										954.0

FH-1H/X				
Phase I Engr		266.0		266.0
APR-44 Sys	30	163.0	30	163.0
SM-756 STE	6	30.0	6	30.0
Data		7.0		7.0
1st Art Test		258.0		258.0
Contr Conting		13.0		13.0
ERADCOM Spt		16.0		16.0
Contr Fld Services		30.0		30.0
TOTAL		783.0		783.0

INSTALLATION (ONA):

	FY 81		FY 82		FY 83		TOTAL	
	QTY	COST	QTY	COST	QTY	COST	QTY	COST
OV-1D	20	(86.0)	33	(153.0)	11	(54.0)	64	(293.0)
RV-1D			14	(19.0)			14	(19.0)
RU-21H	19	(22.0)					19	(22.0)
TOTAL	39	(108.0)	47	(172.0)	11	(54.0)	97	(334.0)

AN/APK-44, Continuous Wave Radar
Warning Receiver

FY 82 Budget Estimate

Exhibit P-3a
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BASIS FOR COST ESTIMATE: (Recap of all a/c systems)

	<u>FY 79 & PY</u>		<u>FY 80</u>		<u>FY 81</u>		<u>FY 82</u>		<u>FY 83</u>		<u>FY 84</u>		<u>TOTAL PROGRAM</u>	
	<u>QTY</u>	<u>COST</u>	<u>QTY</u>	<u>COST</u>	<u>QTY</u>	<u>COST</u>	<u>QTY</u>	<u>COST</u>	<u>QTY</u>	<u>COST</u>	<u>QTY</u>	<u>COST</u>	<u>QTY</u>	<u>COST</u>
Phase I Engr		1,175.0												1,175.0
APR-44 Sys	87	472.0	91	458.0									178	930.0
SM-756 STE	18	91.0	18	91.0									36	182.0
R-2098 Receivers			148	745.0									148	745.0
Data		327.0		64.0										391.0
1st Art Test		397.0		299.0										696.0
Contr Conting		97.0												97.0
ECO Reserve				190.0										190.0
ERADCOM Spt		265.0		183.0										448.0
ECAC Spt		16.0												16.0
Contr Fld Services		30.0												30.0
Airfr Prov			54	195.0	40	226.0	6	76.2	6	71.7	7	65.0	113	633.0
Mod Kits			33	172.0									33	172.0
TOTAL		2,870.0		2,397.0		226.0		76.2		71.7		65.0		5,705.9

AN/APR-44, Continuous Wave Radar Warning Receiver

FY 82 Budget Estimate

Exhibit P-3a

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METHOD OF IMPLEMENTATION: Prototype kits and MWO verification/proof kits will be applied during the First Phase Engineering effort. Where possible, aircraft mods will be accomplished during the aircraft conversion programs. The balance of the mods will be applied in the field by contractor and/or depot contact teams. Implementation summary is as follows:

	<u>OV-1D</u>	<u>RV-1D</u>	<u>RU-21H</u>	<u>RU-21A,B,C</u>	<u>EH-1H,X</u>
Prototype Kits	1	1	1	2	
MWO/Proof Kits		1	1	7	
Conversion Program	24	12			30
Cyclic/Mod Program	83				
Field Application		14	19		
	<u>108</u>	<u>28</u>	<u>21</u>	<u>9</u>	<u>30</u>

KIT DELIVERY SCHEDULE: (For Field Appl)

	<u>FY 80</u>	<u>FY 81</u>	<u>FY 82</u>
	<u>1 2 3 4</u>	<u>1 2 3 4</u>	<u>1 2 3 4</u>
RV-1D			
RU-21H		14	
		19	

FIELD INSTALLATION SCHEDULE:

	<u>FY 80</u>	<u>FY 81</u>	<u>FY 82</u>
	<u>1 2 3 4</u>	<u>1 2 3 4</u>	<u>1 2 3 4</u>
RV-1D			
RU-21H		7 12	

FY 82 Budget Estimate

CLASSIFICATION

REPORTS CONTROL SYMBOL
DD-COMP (AR) 1092

AIRCRAFT MODIFICATION

DATE 11 Dec 80

APPROPRIATION/BUDGET ACTIVITY
APA/2MODIFICATION TITLE AND NO.
AN/APR-39(V)1 Radar Warning ReceiverPIP #: 1-74-01-0823(OH-58); -0824(UH-1), -0825(CH-47),
-0826(AH-1), 1-79-01-1082(OV-1), -1183(RV-1),
-1283(RU-21)

AIRCRAFT AFFECTED: UH-1H (SSN AA0600) OV-1D (SSN AZ3530)
 OH-58 A/C (SSN AA0400) RV-1D (SSN AZ2100)
 CH-47C (SSN AA0250) RU-21 ABCH (SSN AZ2900)
 AH-1Q/S (SSN AA0150)

DESCRIPTION/JUSTIFICATION: Type of Improvement - Operational Capability. The AN/APR-39(V)1 Radar Warning Receiver (RWR) is a light weight, low-cost system determined to be suitable for general aircraft application. It will provide warning of radar directed threats to allow appropriate evasive maneuvers and/or deployment of electronic countermeasures.

DEVELOPMENT STATUS: ECP Approval OH-58A/C Jan 76 OV-1D 1Q 81
 UH-1H Apr 77 RV-1D 1Q 81
 AH-1Q/S May 77 RU-21H Jun 80
 CH-47C Jun 78

<u>MILESTONES:</u>	<u>FY 80</u>	<u>FY 81</u>	<u>FY 82</u>	<u>FY 83</u>
Mod Kit Cont Awd	4Q 80			
Prod Lead Time	12 mos.			
Mod Kit Del Start	1Q 82			
Mod Kit Inst Start	2Q 82			
OV-1D Conv/Mod/PAR Cont Awd	May 80	2Q 81	2Q 82	2Q 83

PROJECT FINANCIAL PLAN: (Amounts in thousands of dollars)

<u>FY 79 & PY</u>	<u>FY 80</u>	<u>FY 81</u>	<u>FY 82</u>	<u>FY 83</u>	<u>FY 84</u>	<u>TOTAL PROGRAM</u>
<u>COST</u>	<u>COST</u>	<u>COST</u>	<u>COST</u>	<u>COST</u>	<u>COST</u>	<u>COST</u>
25,620.0	373.0	150.0	75.0	80.8	72.6	26,371.4

**AN/APR-39(V)1 Radar Warning Receiver
(Consolidated P-3a)**

FY 82 Budget Estimate

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BASIS FOR COST ESTIMATE: (Amounts in thousands of dollars)

	<u>FY 79</u>		<u>FY 80</u>		<u>FY 81</u>		<u>FY 82</u>		<u>FY 83</u>		<u>FY 84</u>		<u>Total Program</u>	
	<u>QTY</u>	<u>COST</u>	<u>QTY</u>	<u>COST</u>	<u>QTY</u>	<u>COST</u>	<u>QTY</u>	<u>COST</u>	<u>QTY</u>	<u>COST</u>	<u>QTY</u>	<u>COST</u>	<u>QTY</u>	<u>COST</u>
OV-1D													24	295.4
OV-1 B/C Conv			7	67.0			4	75.0	6	80.8	7	72.6	10	38.0
PAR Program *					10	38.0							30	112.0
Mod Program					30	112.0							92	189.0
AN/APR-39(V)1 Sys	92	189.0												46.0
STE		46.0												367.0
Non-Recurring		366.0		1.0										1,047.4
		601.0		68.0		150.0		75.0		80.8		72.6		

	<u>FY 79</u>		<u>FY 80</u>		<u>FY 81</u>		<u>FY 82</u>		<u>FY 83</u>		<u>FY 84</u>		<u>Total Program</u>	
	<u>QTY</u>	<u>COST</u>	<u>QTY</u>	<u>COST</u>	<u>QTY</u>	<u>COST</u>	<u>QTY</u>	<u>COST</u>	<u>QTY</u>	<u>COST</u>	<u>QTY</u>	<u>COST</u>	<u>QTY</u>	<u>COST</u>
RU-21 A/B/C/H													19	122.0
Kits	11	71.0	8	51.0									45	93.0
AN/APR-39(V)1 Sys	45	93.0												17.0
STE		17.0												232.0
		181.0		51.0										

	<u>FY 79</u>		<u>FY 80</u>		<u>FY 81</u>		<u>FY 82</u>		<u>FY 83</u>		<u>FY 84</u>		<u>Total Program</u>	
	<u>QTY</u>	<u>COST</u>	<u>QTY</u>	<u>COST</u>	<u>QTY</u>	<u>COST</u>	<u>QTY</u>	<u>COST</u>	<u>QTY</u>	<u>COST</u>	<u>QTY</u>	<u>COST</u>	<u>QTY</u>	<u>COST</u>
RV-1D													14	74.0
Kits			14	74.0									4	43.0
QL II Conv.			4	43.0									28	58.0
AN/APR-39(V) Sys	28	58.0												14.0
STE		14.0												534.0
Non-Recurring		397.0		137.0										78.0
Instl's (OMA)		469.0		254.0	(14	78.0)							(14	723.0

* Programmed Aircraft Restoration

AN/APR-39(V)1 Radar Warning Receiver
(Consolidated P-3a)

FY 82 Budget Estimate

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BASIS FOR COST ESTIMATE: (Amounts in thousands of dollars)

	<u>FY 79 & PY</u>	
	<u>QTY</u>	<u>COST</u>
<u>AH-1Q/S</u>		
Kits	300	326.0
AN/APR-39(V)1 Sys	988	2,583.0
STE		374.0
Non-Recurring		<u>1,059.0</u>
		4,342.0

<u>Total</u>	
<u>Program</u>	
<u>QTY</u>	<u>COST</u>
300	326.0
988	2,583.0
	374.0
	<u>1,059.0</u>
	4,342.0

	<u>FY 79 & PY</u>	
	<u>QTY</u>	<u>COST</u>
<u>CH-47C</u>		
Kits	210	1,484.0
AN/APR-39(V)1 Sys	210	474.0
STE		40.0
Training Devices		512.0
Non-Recurring		<u>660.0</u>
		3,170.0

<u>Total</u>	
<u>Program</u>	
<u>QTY</u>	<u>COST</u>
210	1,484.0
210	474.0
	40.0
	512.0
	<u>660.0</u>
	3,170.0

	<u>FY 78 & PY</u>	
	<u>QTY</u>	<u>COST</u>
<u>OH-58A/C</u>		
Kits	2029	2,743.0
AN/APR-39(V)1 Sys	673	3,536.0
STE		229.0
Non-Recurring		<u>582.0</u>
		7,090.0

<u>Total</u>	
<u>Program</u>	
<u>QTY</u>	<u>COST</u>
2029	2,743.0
673	3,536.0
	229.0
	<u>582.0</u>
	7,090.0

AN/APR-39(V)1 Radar Warning Receiver
(Consolidated P-3a)

FY 82 Budget Estimate

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BASIS FOR COST Estimate: (Amounts in thousands of dollars)

	<u>FY 79 & PY</u>								<u>Total Program</u>	
	<u>QTY</u>	<u>COST</u>							<u>QTY</u>	<u>COST</u>
<u>UH-1H</u>										
Kits	2,698	2,925.0							2,698	2,925.0
AN/APR-39(V)1 Sys	1,674	3,937.0							1,674	3,937.0
STE		473.0								473.0
Training Devices		1,709.0								1,709.0
Non-Recurring		723.0								723.0
		<u>9,767.0</u>								<u>9,767.0</u>

	<u>FY 79 & PY</u>		<u>FY 80</u>	<u>FY 81</u>	<u>FY 82</u>	<u>FY 83</u>		<u>Total Program</u>		
<u>Installation (OMA)</u>	<u>QTY</u>	<u>COST</u>	<u>QTY</u>	<u>COST</u>	<u>QTY</u>	<u>COST</u>	<u>QTY</u>	<u>COST</u>	<u>QTY</u>	<u>COST</u>
RU-21H					19	71.0			19	71.0
RV-1D					14	84.0			14	84.0
AH-1Q/S	288	945.0							288	945.0
CH-47C	32	120.0	177	819.0					209	939.0
OH-58A	466	1,468.0			490	1,078.0	483	1,148.0	1,439	3,694.0
UH-1H	734	980.0			860	1,892.0	304	722.0	2,698	5,222.0
	<u>1,520</u>	<u>3,513.0</u>	<u>177</u>	<u>819.0</u>	<u>800</u>	<u>1,628.0</u>	<u>1,383</u>	<u>3,125.0</u>	<u>4,667</u>	<u>10,955.0</u>

AN/APR-39(V)1 Radar Warning Receiver
(Consolidated P-3a)

FY 82 Budget Estimate

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RECAP OF ALL SYSTEMS:

	<u>FY 79 & PY</u>		<u>FY 80</u>		<u>FY 81</u>		<u>FY 82</u>	
	<u>QTY</u>	<u>COST</u>	<u>QTY</u>	<u>COST</u>	<u>QTY</u>	<u>COST</u>	<u>QTY</u>	<u>COST</u>
Kits	5,248	7,549.0	22	125.0			4	75.0
Conversion Instl			11	110.0				
OV-1D PAR Program					10	38.0		
OV-1D Mod Program					30	112.0		
AN/APR-39(V)1 Sys	3,710	10,870.0						
STE		1,193.0						
Trng Devices		2,221.0						
Non-Recurring		3,787.0		138.0				
Instl's (OMA)	(1,520)	<u>3,513.0</u>	(177)	<u>819.0</u>	(800)	<u>1,628.0</u>	(1,383)	<u>3,125.0</u>
		25,620.0		373.0		150.0		75.0

	<u>FY 83</u>		<u>FY 84</u>		<u>Total Program</u>	
	<u>QTY</u>	<u>COST</u>	<u>QTY</u>	<u>COST</u>	<u>QTY</u>	<u>COST</u>
Kits					5,270	7,674.0
Conversion Instl	6	80.8	7	72.6	28	338.4
OV-1D PAR Program					10	38.0
OV-1D Mod Program					30	112.0
AN/APR-39(V)1 Sys					3,710	10,870.0
STE						1,193.0
Trng Devices						2,221.0
Non-Recurring						3,925.0
Instl's (OMA)	(787)	<u>1,870.0</u>			(4,667)	<u>10,955.0</u>
		80.8		72.6		26,371.4

AN/APR-39(V)1 Radar Warning Receiver
(Consolidated P-3a)

FY 82 Budget Estimate

Page 6

KIT DELIVERY SCHEDULE:

	<u>FY 79 & PY</u>	<u>1</u>	<u>FY 80</u>		<u>4</u>	<u>1</u>	<u>FY 81</u>		<u>4</u>
			<u>2</u>	<u>3</u>			<u>2</u>	<u>3</u>	
RU-21H									
RV-1D									
AH-1Q/S	300								
CH-47C	32	93	75	10					
OH-58A	466								
OH-58C	280					77	78	77	78
UH-1H	734				80	240	240	240	420
	<u>1,812</u>	<u>93</u>	<u>75</u>	<u>10</u>	<u>80</u>	<u>317</u>	<u>318</u>	<u>317</u>	<u>498</u>

	<u>1</u>	<u>FY 82</u>		<u>4</u>	<u>TOTAL PROGRAM</u>
	<u>19</u>	<u>2</u>	<u>3</u>		
RU-21H	19				19
RV-1D	14				14
AH-1Q/S					300
CH-47C					210
OH-58A	24	245	245	238	1,439
OH-58C					590
UH-1H	240	180	180	144	2,698
	<u>518</u>	<u>425</u>	<u>425</u>	<u>382</u>	<u>5,270</u>

AN/APR-39(V)1 Radar Warning Receiver
(Consolidated P-3a)

FY 82 Budget Estimate

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KIT INSTALLATION SCHEDULE:

	<u>FY 79 & PY</u>	<u>1</u>	<u>FY 80</u>		<u>4</u>	<u>1</u>	<u>FY 81</u>		<u>4</u>
			<u>2</u>	<u>3</u>			<u>2</u>	<u>3</u>	
RU-21H									
RV-1D									
AH-1Q/S	288								
CH-47C	32		65	65	47				
OH-58A	466								
OH-58C	280								
UH-1H	734					80	240	240	240
	<u>1,800</u>		<u>65</u>	<u>65</u>	<u>47</u>	<u>80</u>	<u>240</u>	<u>240</u>	<u>240</u>

	<u>1</u>	<u>FY 82</u>		<u>4</u>	<u>1</u>	<u>FY 83</u>		<u>4</u>	<u>TOTAL PROGRAM</u>
		<u>2</u>	<u>3</u>	<u>5</u>		<u>2</u>	<u>3</u>		
RU-21H		<u>7</u>	<u>7</u>	<u>8</u>					19
RV-1D									14
AH-1Q/S									288
CH-47C									209
OH-58A			245	245		245	238		1,439
OH-58C	37	38	37	38		40	40	40	590
UH-1H	<u>240</u>	<u>240</u>	<u>240</u>	<u>240</u>		<u>180</u>	<u>124</u>	<u>40</u>	<u>2,698</u>
	<u>277</u>	<u>285</u>	<u>495</u>	<u>476</u>		<u>465</u>	<u>402</u>	<u>40</u>	<u>5,257</u>

METHOD OF IMPLEMENTATION: Remaining AH-1 fleet will be modified in conjunction with the 372 G to S Conversion/Modernization Program. OH-58C installations will be made during the OH-58C conversion program (585 aircraft) and the installations are funded as part of that program. RU-21, RV-1, CH-47 and UH-1 airframe provisions will be installed by contract teams at user locations. OV-1D provisions will be installed during the OV-1D Conversion, Mod and Programmed Aircraft Restoration (PAR) programs.

CLASSIFICATION

FY 82 Budget Request

REPORTS CONTROL SYMBOL
DD-COMP (AR) 1092

AIRCRAFT MODIFICATION

DATE 11 DEC 80

APPROPRIATION/BUDGET ACTIVITY

APA/2

MODIFICATION TITLE AND NO.

XM-130 General Purpose Dispenser 1-78-01-0860(CH-47C)

PIP #1-79-01-1079(OV-1), 1-79-01-0884(RV-1),
1-79-01-1779(EH-1)

AIRCRAFT AFFECTED: CH-47C (SSN AA0250)
OV-1D (SSN AZ3530)
RV-1D (SSN AZ2100)
EH-1H/X (SSN AZ1200)

DESCRIPTION/JUSTIFICATION: Type of Improvement - Operational Capability

The XM-130 dispenser system provides effective countermeasures against radar and infrared missile threats. The system incorporates the most cost appropriate design features of existing decoy dispensing systems in modularly constructed to achieve maximum commonality of components and provide dual mod operation (manual and automatic) with radar warning receiver, missile launch detectors and missile approach detectors.

DEVELOPMENT STATUS: DT/OT II Comp Aug FY 77
DEVA IPR - Aug FY 77
1st Prod Awd - Feb 78

MILESTONES:

	<u>FY 80</u>	<u>FY 81</u>	<u>FY 82</u>
Mod Kit Contr - Awd	Nov 79	1Q 81	1Q 82
Production Lead Time	9 mos.	4 mos.	4 mos.
Mod Kit Del Start	4Q 80	3Q 81	3Q 82
Mod Kit Instl Start	1Q 81	3Q 81	3Q 82
XM-130 Sys Contr Awd		1Q 81	1Q 82
Production Lead Time		6 mos.	6 mos.
XM-130 Sys Del Start		4Q 81	4Q 82

PROJECT FINANCIAL PLAN: (Amounts in thousands of dollars)

<u>FY 79 & PY</u>	<u>FY 80</u>	<u>FY 81</u>	<u>FY 82</u>	<u>FY 83</u>	<u>FY 84</u>	<u>TOTAL PROGRAM</u>
<u>COST</u>	<u>COST</u>	<u>COST</u>	<u>COST</u>	<u>COST</u>	<u>COST</u>	<u>COST</u>
5,192.0	1,632.0	2,109.0	56.0	58.3	45.0	9,092.3

XM-130 General Purpose Dispenser

FY 82 Budget Request
Exhibit P-3a
 Page 2 of 4

BASIS FOR COST ESTIMATE: (Amounts in thousands of dollars)

	<u>FY 79</u>		<u>FY 80</u>		<u>FY 81</u>		<u>FY 82</u>		<u>FY 83</u>		<u>FY 84</u>		<u>TOTAL PROGRAM</u>	
	<u>QTY</u>	<u>COST</u>	<u>QTY</u>	<u>COST</u>	<u>QTY</u>	<u>COST</u>	<u>QTY</u>	<u>COST</u>	<u>QTY</u>	<u>COST</u>	<u>QTY</u>	<u>COST</u>	<u>QTY</u>	<u>COST</u>
OV-1														
A Kits			42	156.0	48	218.0							90	374.0
Conversion							4	56.0	6	58.3	7	45.0	17	159.3
XM-130 Sys	18	64.0	60	298.0	26	158.0							104	520.0
STE		20.0		75.0		55.0								150.0
ECP MWO		342.0												342.0
Non-Recurring				119.0		10.0								129.0
AVRADCOM Spt		18.0		123.0		73.0								214.0
Installations					(44)	(90.0)	(46)	(102.0)					(90)	(192.0)
TOTAL		<u>444.0</u>		<u>771.0</u>		<u>514.0</u>		<u>56.0</u>		<u>58.3</u>		<u>45.0</u>		<u>1,888.3</u>

	<u>FY 79</u>		<u>FY 80</u>		<u>FY 81</u>		<u>FY 82</u>		<u>TOTAL PROGRAM</u>	
	<u>QTY</u>	<u>COST</u>	<u>QTY</u>	<u>COST</u>	<u>QTY</u>	<u>COST</u>	<u>QTY</u>	<u>COST</u>	<u>QTY</u>	<u>COST</u>
RV-1D										
A Kits			24	90.0	2	11.0			26	101.0
Conversion							2	10.0	2	10.0
XM-130 Sys	20	71.0	11	55.0					31	126.0
STE		20.0		31.0						51.0
ECP MWO		280.0								280.0
AVRADCOM Spt		128.0		32.0						160.0
Installations (OMA)							(26)	(48.0)	(26)	(48.0)
TOTAL		<u>499.0</u>		<u>208.0</u>		<u>11.0</u>		<u>10.0</u>		<u>718.0</u>

	<u>FY 80</u>		<u>FY 81</u>		<u>FY 82</u>		<u>TOTAL PROGRAM</u>			
	<u>QTY</u>	<u>COST</u>	<u>QTY</u>	<u>COST</u>	<u>QTY</u>	<u>COST</u>	<u>QTY</u>	<u>COST</u>		
EH-1H/X										
A Kits		9	21.0	19	60.0			28	81.0	
XM-130 Sys		33	156.0					33	156.0	
STE			31.0						31.0	
ECP MWO			270.0						270.0	
Non-Recurring				21.0					21.0	
AVRADCOM Spt			175.0						175.0	
Installations (OMA)					(21)	(40.0)	(7)	(20.0)	(28)	(60.0)
TOTAL			<u>653.0</u>		<u>81.0</u>				<u>734.0</u>	

XM-130 General Purpose Dispenser

FY 82 Budget Request
Exhibit P-3a
Page 3 of 4

CH-47	FY 79 & PY		FY 81		FY 82		FY 83		TOTAL PROGRAM	
	QTY	COST	QTY	COST	QTY	COST	QTY	COST	QTY	COST
A Kits	209	3,078.0							209	3,078.0
XM-130 Systems	80	470.0	162	1,027.0					242	1,497.0
STE				324.0						324.0
ECP MWO		496.0								496.0
Non-Recurring		65.0								65.0
AVRADCOM Spt		140.0		152.0						292.0
Installations (OMA)			(109)	(889.0)	(60)	(531.0)	(39)	(371.0)	(208)	(1,791.0)
TOTAL		4,249.0		1,503.0						5,752.0

BASIS FOR COST ESTIMATE: (RECAP OF ALL SYSTEMS)

	FY 79 & PY		FY 80		FY 81		FY 82		FY 83		FY 84		TOTAL PROGRAM	
	QTY	COST	QTY	COST	QTY	COST	QTY	COST	QTY	COST	QTY	COST	QTY	COST
A Kits	209	3,078.0	75	267.0	69	289.0							353	3,634.0
Conversion							4	56.0	6	58.3	5	45.0	19	159.3
XM-130 Sys	118	605.0	104	509.0	188	1,185.0							410	2,299.0
STE		40.0		137.0		379.0								556.0
ECP MWO		1,118.0		270.0										1,388.0
Non-Recurring		65.0		119.0		31.0								215.0
AVRADCOM Spt		286.0		330.0		225.0								841.0
Installations (OMA)					(175)	(1019.0)	(139)	(701.0)	(39)	(371.0)			(353)	(2,091.0)
TOTAL		5,192.0		1,632.0		2,109.0		56.0		58.3		45.0		9,092.3

XM-130 General Purpose Dispenser

FY 82 Budget Estimate
Exhibit P-3a

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KIT DELIVERY SCHEDULE:

	FY 79				FY 80				FY 81				FY 82				
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	
CH-47C								28	40	40	40	40	20				
OV-1D										14	15	15	10	10	10	16	
RV-1D										6	7	7	7				
EH-1H/X										6	6	8	8				

KIT INSTALLATION SCHEDULE:

	FY 79				FY 80				FY 81				FY 82				FY 83				FY 84				TOTAL
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	
CH-47									20	30	30	30	15	15	15	15	19	19							208
OV-1D										14	15	15	10	10	10	16									90
RV-1D													6	6	6	8									26
EH-1H/X										8	8	5	4	3											28

METHOD OF IMPLEMENTATION: Depot/Contract teams will install mod kits on the CH-47C, EH-1H/X, OV-1D and RV-1D aircraft. In addition to field retrofit, 19 OV-1D/RV-1D's aircraft will be provisioned during the FY 82-84 Conversion Programs.

ACTIVITY 2 - AIRCRAFT MODIFICATIONS					EXHIBIT P-3	
Reports Control Symbol DD-COMP(AR) 1092					Date: 11 Dec 80	
APPROPRIATION: APA/2 (SSN:AZ2000)						
MODEL: RC-12D MODIFICATION (1)	FY 1981		FY 1982		FY 1983	
	Quantity (2)	Amount (Thousands) (3)	Quantity (4)	Amount (Thousands) (5)	Quantity (6)	Amount (Thousands) (7)
Airplane Recon RC-12D	8	49,617.0	8	51,456.0		
BIC Integration			4	1,244.0		
* AN/ALQ-162 (page 1-82) CW Radar Jammer					17	1,437.0
<u>TOTAL</u>		49,617.0		52,700.00		1,437.0
* Consolidated P-3A						

CLASSIFICATION

REPORTS CONTROL SYMBOL
DD-COMP (AH) 1092

AIRCRAFT MODIFICATION

DATE 11 Dec 80

APPROPRIATION/BUDGET ACTIVITY
APA/2 (SSN: AZ2000)MODIFICATION TITLE AND NO.
Airplane Recon, RC-12D, PIP #1-80-01-1216

AIRCRAFT AFFECTED: RC-12D

DESCRIPTION/JUSTIFICATION: (C) GUARDRAIL is a combined airborne/ground electronic system capable of intercepting and locating target communications emitters. This program will upgrade existing GUARDRAIL V System with an a lighter weight integrated inertial navigation system (IINS) with improved reliability, an automatic signal classification and acquisition system, interoperability integration and installation in a pressurized C-12 aircraft. Through these improvements, the system will gain and improved reliability and survivability in the threat environment. As a result, tactical field commanders will be provided with a higher volume of timely quality intelligence information necessary to make correct decisions on the battlefield, even under high ECM threat conditions. Upon completion of the modification effort, two upgraded GUARDRAIL systems and additional aircraft will be available.

DEVELOPMENT STATUS: The basic features to be incorporated by this effort have already been developed by contractor Independent Research and Development (IR&D) programs or by previous Signal Intelligence (SIGINT) research and development system efforts.

MILESTONES:

FY 81

FY 82

FY 83

FY 84

FY 81 Contract Award
Input A/C for Mod
Start Del A/C to Msn Contr
1st Sys Avail
1st Sys Oper

3Q
4Q

1Q

FY 82 Contract Award
Input A/C for Mod
2nd Sys Avail
2nd Sys Oper

1Q
3Q

*Electronic Counter Measure (ECM)

1- 77 - 1/15 /81

RC-12D AIRPLANE RECON
PIP #1-80-01-1216

PROJECT FINANCIAL PLAN: (Amounts in thousands of dollars)

FY 81		FY 82		TOTAL PROGRAM	
QTY	AMT	QTY	AMT	QTY	AMT
8	49,617.0	8	51,456.0	16	101,073.0

BASIS FOR COST ESTIMATE: (Amounts in thousands of dollars)

	FY 81		FY 82		TOTAL PROGRAM	
	QTY	AMT	QTY	AMT		
APA PRIMARY						
IPD MOD	(1)	8,614.0	(1)	12,965.6 *	(2)	21,579.6
ARF MOD	(6)	7,542.0	(6)	11,805.2 *	(12)	19,347.2
AGE MOD	(1)	134.0	(1)	1,656.8 *	(2)	1,790.8
ACFT MOD	(8)	5,411.0	(8)	5,945.0	(16)	11,356.0
INS ASN-132	(8)	2,576.0	(8)	2,823.3	(16)	5,399.3
TCT			(10)	463.7 *	(10)	463.7
ASE	(8)	1,615.0	(8)	1,771.2	(16)	3,386.2
STE	(1)	556.0	(2)	2,042.8 *	(3)	2,598.8
FLOAT	(3)	690.0	(1)	1,225.7 *	(4)	1,915.7
NON-REC(CONTR)		15,703.0		6,507.8		22,210.8
DATA		4,151.0		-		4,151.0
FOE TEST		725.0		-		725.0
FIELD SUPT (CONTR)		275.0		306.4		581.4
NON-REC (GOVT)		1,625.0		1,766.8		3,391.8
TNG EQUIP		-		2,175.7		2,175.7
TOTAL APA PRIMARY		49,617.0		51,456.0		101,073.0

*Complete New System Hardware

1-78 - 1/15/81

RC-12D AIRPLANE RECON
PIP # 1-80-01-1216

BASIS FOR COST ESTIMATE CONT'D (Amounts in thousands of dollars)

<u>ITEM DESCRIPTION</u>	FY 81		FY 82		TOTAL PROGRAM	
	<u>QTY</u>	<u>AMT</u>	<u>QTY</u>	<u>AMT</u>	<u>QTY</u>	<u>AMT</u>
(OMA)						
738018		(1,038.0)		(1,386.0)		(2,424.0)
Training		(873.0)		(971.0)		(1,844.0)
Acft Detachment						
TOTAL 738017		(1,911.0)		(2,357.0)		(4,268.0)

METHOD OF IMPLEMENTATION: The Guardrail V System will be modified at contractor facilities.

KIT DELIVERY SCHEDULE: Not applicable.

	FY 81				FY 82				FY 83				FY 84				FY 85				FY 86			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4				
Induction (Acft)			0	1	3	3	3	3	3															
Completions (Delivery by Acft Contractor)									3	3	3	3	3	1										
Completion (Delivery by Msn Contractor)													6	6						4				

FY 82 BUDGET ESTIMATE

CLASSIFICATION

REPORTS CONTROL SYMBOL
DD-COMP (AR) 1092

PROJECT MODIFICATION

DATE 11 DEC 80

APPROPRIATION/BUDGET ACTIVITY
APA/2 (SSN: AZ2000)TITLE AND NO.
BIC INTEGRATION, PIP #1-82-01-1285

AIRCRAFT AFFECTED: RC-12D

DESCRIPTION/JUSTIFICATION: Type of Improvement - Operational Capability. This program will add the signal identification capabilities of the Binary Correlator (BIC) to the GUARDRAIL V systems. The existing GUARDRAIL V system which are expected to increase in density in the future. This program also adds the capability for GUARDRAIL to successfully handle an important class of signals which will significantly add to the system's tactical value and extend its useful life.

DEVELOPMENT STATUS: System is in engineering development stage at SWL and will be ready for production decision in 4Q81.

MILESTONES:

	<u>FY 81</u>	<u>FY 82</u>	<u>FY 84</u>	<u>FY 85</u>
Proj Initiated		2Q82		
IPR/Prod Decision	4Q81			
Prod Con Award		2Q82		
First Prod Hdw/Del			1Q84	
First Kit App			1Q84	
Last Kit App				2Q85

PROJECT FINANCIAL PLAN: (Amounts in thousands of dollars)

<u>FY 82</u>		<u>TOTAL PROGRAM</u>	
<u>QTY</u>	<u>AMT</u>	<u>QTY</u>	<u>AMT</u>
	1,226.0		1,226.0

1-80 - 1/15/81

RC-12D BIC INTEGRATION
PIP # 1-82-01-1285

BASIS FOR COST ESTIMATE: (Amounts in thousands of dollars)

	FY 82		FY 83		FY 84		FY 85		TOTAL PROGRAM	
	QTY	AMT	QTY	AMT	QTY	AMT	QTY	AMT	QTY	AMT
Kits		1,244.0								1,244.0
Non-Recur (OMA)		(96.0)		(103.0)		(109.0)		(58.0)		(336.0)
Instl (OMA)						(28.0)		(30.0)		(58.0)
TOTAL		1,244.0								1,244.0

METHOD OF IMPLEMENTATION: Field installation by contractor team.

KIT DELIVERY SCHEDULE:

	FY 84				FY 85			
QTY/Qtr	1	2	3	4	1	2	3	4
	3							

INSTALLATION SCHEDULE:

	FY 84				FY 85			
Qty/Qtr	1	2	3	4	1	2	3	4
	1	1						

1-81 - 1/15/81

CLASSIFICATION

FY 82 Budget Request

REPORTS CONTROL SYMBOL DD-COMP (AR) 1092	AIRCRAFT MODIFICATION	DATE 11 DEC 80																																				
APPROPRIATION/BUDGET ACTIVITY		MODIFICATION TITLE AND NO. AN/ALQ-162(V)2, Continuous Wave (CW) Radar Jammer PIP #1-80-01-1178(RV-1D), #1-82-01-0676(RC-12)																																				
<u>AIRCRAFT AFFECTED:</u> RV-1D (SSN AZ2100) RC-12 (SSN A02005) <u>DESCRIPTION/JUSTIFICATION:</u> Type of Improvement - Operational Capability The AN/ALQ-162(V)2 countermeasure set will be a stand alone set capable of self-protection for Special Electronic Mission Aircraft (SEMA) against selected Surface to Air Missile and Air Intercept threats, Development of the system is a joint Army/Navy effort. <u>DEVELOPMENT STATUS:</u> DT/OT II Complete: 3Q FY 82 DEVA IPR: 1Q FY 83 1st Prod Award: 2Q FY 83 <u>MILESTONES:</u> <table> <thead> <tr> <th></th> <th><u>FY 83</u></th> <th><u>FY 84</u></th> </tr> </thead> <tbody> <tr> <td>Mod Kit Contr - Awd</td> <td>3Q 83</td> <td></td> </tr> <tr> <td>Production Lead Time</td> <td>9 mos.</td> <td></td> </tr> <tr> <td>Mod Kit Del Start</td> <td></td> <td>2Q 84</td> </tr> <tr> <td>Mod Kit Instl Start</td> <td></td> <td>3Q 84</td> </tr> <tr> <td>AN/ALQ-162(V)2 Contr Awd</td> <td>2Q 83</td> <td></td> </tr> <tr> <td>Production Lead Time</td> <td>12 mos.</td> <td></td> </tr> <tr> <td>AN/ALQ-162(V)2 Del Start</td> <td></td> <td>2Q 84</td> </tr> </tbody> </table> <u>PROJECT FINANCIAL PLAN:</u> (Amounts in thousands of dollars) <table> <thead> <tr> <th><u>FY 83</u></th> <th><u>FY 84</u></th> <th><u>FY 85</u></th> <th><u>TOTAL PROGRAM</u></th> </tr> <tr> <th><u>COST</u></th> <th><u>COST</u></th> <th><u>COST</u></th> <th><u>COST</u></th> </tr> </thead> <tbody> <tr> <td>3,922.7</td> <td>1,304.0</td> <td></td> <td>5,226.7</td> </tr> </tbody> </table>				<u>FY 83</u>	<u>FY 84</u>	Mod Kit Contr - Awd	3Q 83		Production Lead Time	9 mos.		Mod Kit Del Start		2Q 84	Mod Kit Instl Start		3Q 84	AN/ALQ-162(V)2 Contr Awd	2Q 83		Production Lead Time	12 mos.		AN/ALQ-162(V)2 Del Start		2Q 84	<u>FY 83</u>	<u>FY 84</u>	<u>FY 85</u>	<u>TOTAL PROGRAM</u>	<u>COST</u>	<u>COST</u>	<u>COST</u>	<u>COST</u>	3,922.7	1,304.0		5,226.7
	<u>FY 83</u>	<u>FY 84</u>																																				
Mod Kit Contr - Awd	3Q 83																																					
Production Lead Time	9 mos.																																					
Mod Kit Del Start		2Q 84																																				
Mod Kit Instl Start		3Q 84																																				
AN/ALQ-162(V)2 Contr Awd	2Q 83																																					
Production Lead Time	12 mos.																																					
AN/ALQ-162(V)2 Del Start		2Q 84																																				
<u>FY 83</u>	<u>FY 84</u>	<u>FY 85</u>	<u>TOTAL PROGRAM</u>																																			
<u>COST</u>	<u>COST</u>	<u>COST</u>	<u>COST</u>																																			
3,922.7	1,304.0		5,226.7																																			

DRST-C Form
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2075

Edition of 1 May 76, may be used.

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CLASSIFICATION

EXHIBIT P. 3a

**AN/ALQ-162(V)2, Continuous Wave (CW)
Radar Jammer**

**FY 82 Budget Request
Exhibit P-3a
Page 2**

BASIS FOR COST ESTIMATE: (Amounts in thousands of dollars)

	<u>QTY</u>	<u>FY 83</u> <u>COST</u>	<u>QTY</u>	<u>FY 84</u> <u>COST</u>	<u>QTY</u>	<u>FY 85</u> <u>COST</u>	<u>TOTAL PROGRAM</u> <u>QTY</u>	<u>COST</u>
<u>RV-1D</u>								
Non-Recurring Engr		537.7						537.7
AN/ALQ-162(V)2	28	1,707.0					28	1,707.0
* STE	3	141.0					3	141.0
Airfr. Mod Kits	27	100.0					27	100.0
Installation (OMA)			(15)	(25.0)	(12)	(20.0)	(27)	(45.0)
TOTAL		<u>2,485.7</u>						<u>2,485.7</u>
 <u>RC-12</u>	 <u>QTY</u>	 <u>FY 83</u> <u>COST</u>	 <u>QTY</u>	 <u>FY 84</u> <u>COST</u>	 <u>QTY</u>	 <u>FY 85</u> <u>COST</u>	 <u>TOTAL PROGRAM</u> <u>QTY</u>	 <u>COST</u>
Non-Recurring		185.0		140.0				325.0
AN/ALQ-162(V)2	17	1,036.0	17	1,064.0			34	2,100.0
* STE	2	94.0	2	100.0			4	194.0
Airfr. Mod Kits	33	122.0					33	122.0
Installation (OMA)			(19)	(30.0)	(14)	(23.0)	(33)	(53.0)
		<u>1,437.0</u>		<u>1,304.0</u>				<u>2,741.0</u>

* Special Test Equipment

**AN/ALQ-162(V)2, Continuous Wave (CW)
Radar Jammer**

**FY 82 Budget Request
Exhibit P-3a
Page 3**

BASIS FOR COST ESTIMATE: (Amounts in thousands of dollars)

RECAP FOR ALL AIRCRAFT

	<u>FY 83</u>		<u>FY 84</u>		<u>FY 85</u>		<u>TOTAL PROGRAM</u>	
	<u>QTY</u>	<u>COST</u>	<u>QTY</u>	<u>COST</u>	<u>QTY</u>	<u>COST</u>	<u>QTY</u>	<u>COST</u>
Non-Recurring Engr		722.7		140.0				862.7
AN/ALQ-162(V)2	45	2,743.0	17	1,064.0			62	3,807.0
STE	5	235.0	2	100.0			7	335.0
Conv Installation								
Airframe Mod Kits	60	222.0					60	222.0
Installation (OMA)			(34)	(55.0)	(26)	(43.0)	(60)	(98.0)
TOTAL		<u>3,922.7</u>		<u>1,304.0</u>				<u>5,226.7</u>

METHOD OF IMPLEMENTATION: Aircraft modifications will be accomplished by contractor or depot contact teams at various CONUS and OCONUS locations. Estimated installation time is 50 man-hours per aircraft.

Mod Kit Delivery Schedule

	<u>FY 84</u>			
	<u>1</u>	<u>2</u>	<u>3</u>	<u>4</u>
RV-1D		9	9	9
RC-12D		13	10	10

Installation Schedule

	<u>FY 84</u>				<u>FY 85</u>			
	<u>1</u>	<u>2</u>	<u>3</u>	<u>4</u>	<u>1</u>	<u>2</u>	<u>3</u>	<u>4</u>
RV-1D			6	9	12			
RC-12D			10	9	14			

ACTIVITY 2 - AIRCRAFT MODIFICATIONS					EXHIBIT P-3	
Reports Control Symbol DD-COMP(AR) 1092						
APPROPRIATION: APA/2 (SSN AZ2100)					Date: 11 Dec 80	
MODEL: RV-1D, Quick Look II. MODIFICATION (1)	FY 1981		FY 19 82		FY 19 83	
	Quantity (2)	Amount (Thousands) (3)	Quantity (4)	Amount: (Thousands) (5)	Quantity (6)	Amount (Thousands) (7)
QL II Conversion		1,321.0		5,001.0		155.4
**Hot Metal + Plume Suppressor		1,160.0		-		-
Inflight Readout Device		1,549.0		2,653.6		
Airborne Magnetic Tape Recorder				2,143.3		
**X-Y Plotter		311.0				
*XM-130 General Purpose Dispenser (page 1-72)		11.0				
Other:				102.1		
Propeller Reversal Control				(49.0)		
AN/USQ-61 Digital Data Set				(8.2)		
*R-1963/ARN GS/MB Receiver (page 1-101)				(9.2)		
AN/ALQ-147A(V)2 Countermeasure Set				(21.4)		
*AN/APR-44(V) CW Radar Warning Receiver (page 1-60)				(10.2)		
*AN/ARC-164 UHF/AM Radio (page 1-104)				(4.1)		
*AN/ALQ-162 (page 1-82)					18	2,485.7
Stall Warning System						258.9
<u>TOTAL</u>		4,352.0		9,900.0		2,900.0
* Consolidated P-3A						
** P-3a not included. No FY 82/83 Funds.						

DEFENSE CONTROL SYMBOL
DI-COMP (AR) 1092

AIRCRAFT MODIFICATION

DATE 11 Dec 80

APPROPRIATION/BUDGET ACTIVITY

APA/2 (SSN AZ2100)

MODIFICATION TITLE AND NO.

Quick Look II, PIP #1-75-01-0306

AIRCRAFT AFFECTED: OV-1B

DESCRIPTION/JUSTIFICATION: Type of Improvement - Operational Capability. This modification will convert OV-1B to the RV-1D configuration: Including new propulsion system, landing gear, avionics/electronics, communication, navigation and surveillance systems, ground support and test equipment. The RV-1D will provide increased aircraft and mission performance and capability resulting from the new airborne electronic-counter measures surveillance system. The system is planned for employment at Corps Level.

DEVELOPMENT STATUS:

Engineering Development Completed - Aug 74
Testing - DT/OT II - Start Sep 74; Complete Nov 74
Type Classification - Limited Production Aug 74

MILESTONES:

	FY 76 EST DATE	FY 77 EST DATE	FY 78 EST DATE	FY 79 EST DATE	FY 80 EST DATE
Contract Award for Airframe(A/C)	Feb 76	Feb 76	Feb 78	Feb 79	May 80
Leadtime Airframe(A/C)	18 Mo	16 Mo	14 Mo	14 Mo	14 Mo
Contract Award for ALQ-133	Oct 75		Dec 78	Apr 79	
Leadtime for ALQ-133	15 Mo		15 Mo	15 Mo	
Production Rate for Aircraft	(1/mo for 6, then 1 every other mo.)				
ALQ-133 Delivery Starts	Dec 76		4Q 80	4Q 81	
TOTAL Program Instln Completed					2Q 82

PROJECT FINANCIAL PLAN: (Amounts in thousands of dollars)

PRIOR YEARS		FY 80		FY 81		FY 82		FY 83		TOTAL PROGRAM	
QTY	COST	QTY	COST	QTY	COST	QTY	COST	QTY	COST	QTY	COST
24	87,174.0	4	6,985.0		1,321.0		5,001.0		155.4		100,636.4

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CLASSIFICATION

EXHIBIT P. 3a

QUICK LOOK II

PIP # 1-75-01-0306

BASIS FOR COST ESTIMATE: (Amounts in thousands of dollars)

	PRIOR YEARS		FY 80		FY 81		FY 82		FY 83		TOTAL PROGRAM	
	QTY	COST	QTY	COST	QTY	COST	QTY	COST	QTY	COST	QTY	COST
Conversion	24	21,697.0	4	4,768.0		0	2	2,699.5				29,164.5
GFE (Acft)		11,467.0		398.0		368.0		1,765.7				13,998.7
Avionics		10,042.0				0		0				10,042.0
Mission Equip												0
(A) ALQ-133	28	25,887.0		0		0		0				25,887.0
(B) USQ-61	28	980.0		0		0		0				980.0
(C) USM-393/ALM-153/ALM-154	6	4,587.0		0		0		0			6	4,587.0
(D) MSA-34	2	290.0		0		0		0			2	290.0
Maint Van	13	1,069.0	3	261.0		0		0			16	1,330.0
Other Equip & Spt		<u>11,155.0</u>		<u>1,558.0</u>		<u>953.0</u>		<u>535.8</u>		<u>155.4</u>		<u>14,357.2</u>
TOTAL	24	87,174.0	4	6,985.0		1,321.0		5,001.0		155.4		<u>1/100,636.4</u>

(A) Re FY 75: includes 2 sets for training

(B) Re FY 75: includes 4 sets for training

(C) Re FY 75: includes 2 Ground Stations for training, less one (1) ALM-153.

(D) Re FY 78: includes 1 Ground Station and One (1) ALM-153 for training

(D) Re all FYs: Includes diagnostic tapes/training/data/general test equipment/ECCM Spt/STE/Target to ceiling.

1/ Total quantity indicates aircraft conversions, 2 aircraft lost in FY79

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QUICK LOOK II
PIP # 1-75-01-0306

METHOD OF IMPLEMENTATION: Installation will be accomplished by the contractor.

KIT DELIVERY SCHEDULE: Not applicable

INSTALLATION SCHEDULE:

	FY 76				FY 77				FY 78				FY 79				FY 80				FY 81					
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4		
Inductions		1	2		1				1	2	2	3		2	1	2	1	2	1	2	1	1				
Completions						1	2	1	2	2	3	1					3	3				3	3			

CLASSIFICATION		REPORTS CONTROL SYMBOL DD-COMP (AR) 1092	AIRCRAFT MODIFICATION	DATE 11 Dec 80
APPROPRIATION/BUDGET ACTIVITY APA/2 (SSN AZ2100)			MODIFICATION TITLE AND NO. In Flight Readout Device for ALQ-133, PIP # 1-81-01-1187	
AIRCRAFT AFFECTED: RV-1D				
DESCRIPTION JUSTIFICATION: Type of Improvement - Operational Capability. In the present Quick Look II configuration, the aircrew has no realtime interface with or feedback from the AN/ALQ-133. The existing C-9538 Control Indicator only allows the aircrew to apply power to the system (on-off), select receiver pod(s) and monitor a set of system status indicator lights. The in-flight readout device would provide the aircrew with an expanded interface with and feedback from the AN/ALQ-133.				
DEVELOPMENT STATUS:				
Initiate Engineering	1Q 81			
ECP Approval	2Q 82			
MILESTONES:	<u>FY 81</u>	<u>FY 82</u>	<u>FY 83</u>	
Contract Award	1Q 81			
Leadtime	6 mo	4Q 82		
Delivery Starts			1Q 83	
Installation Starts			3Q 83	
Installation Complete			3Q 83	
PROJECT FINANCIAL PLAN: (Amounts in thousands of dollars)				
	FY 81		FY 82	
	QTY COST		QTY COST	TOTAL PROGRAM
				QTY COST
		1,549.0	2,653.6	4,202.6

IN FLIGHT READOUT DEVICE FOR ALQ-133
FIP # 1-81-01-1187

Exhibit P-3a
Page 2 of 2

BASIS FOR COST ESTIMATE: (Amounts in thousands of dollars)

	FY 81		FY 82		FY 83		TOTAL	
	QTY	COST	QTY	COST	QTY	COST	QTY	COST
Non-Recurring		1,393.0		1,024.7				2,417.7
In Flight Display Units	4	104.0		1,038.0				1,142.0
Misc Equip		52.0						52.0
Pwr Supply/Mount				259.2				259.2
Interface Units				259.2				259.2
Aircraft Kits				72.5				72.5
Installation (OMA)						(299.0)		(299.0)
TOTAL		1,549.0		2,653.6				4,202.6

METHOD OF IMPLEMENTATION: A Contract field team will modify training systems devices, and depot testing system device.

3 intelligence school

KIT DELIVERY SCHEDULE:

INSTALLATION SCHEDULE:

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REPORTS CONTROL SYMBOL DD-COMP (AR) 1092	AIRCRAFT MODIFICATION	DATE 11 Dec 80
APPROPRIATION/BUDGET ACTIVITY APA/2 (SSN AZ2100)	MODIFICATION TITLE AND NO. Airborne Magnetic Tape Recorder for AN/ALQ-133, PIP # 1-80-01-1186	
AIRCRAFT AFFECTED: RV-1D		
DESCRIPTION/JUSTIFICATION: Type of Improvement - Operational Capability. The purpose of this program is the improvement of the operational and maintenance/diagnostic capabilities of the AN/ALQ-133 Non-Communications Emitter Location and Identification System, Quick Look II, mounted in RV-1D Mohawk aircraft. The current tape recorder is a non-standard, nonsupportable item that does not meet operational and supportability requirements. To standardize the tape recorders used in the Quick Look Program, this improvement would also replace the RD-392U tape recorder used in the AN/USM-393, AN/ALM-154 and the AN/ALM-153.		
DEVELOPMENT STATUS:		
Initiate Engineering	1Q 82	
ECP Approval	3Q 82	
MILESTONES:		
	<u>FY 82</u>	<u>FY 83</u>
Contract Award	3Q82	
Leadtime	6mo	
Delivery Starts		1Q 83
Installation Starts		1Q 83
Installation Complete		4Q 83
PROJECT FINANCIAL PLAN: (Amounts in thousands of dollars)		
	FY 82 <u>QTY</u> <u>COST</u>	FY 83 <u>QTY</u> <u>COST</u>
	2,143.3	2,143.3

AIRBORNE MAGNETIC TAPE RECORDER FOR AN/ALQ-133

PIP # 1-80-01-1186

Exhibit P-3a

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BASIS FOR COST ESTIMATE: (Amounts in thousands of dollars)

	FY 82		FY 83		TOTAL	
	QTY	COST	QTY	COST	QTY	COST
Non-Recurring		652.2				652.2
Misc Equipment		36.7				36.7
Airframe Kits		36.7				36.7
Digital Tape Recorder	56	1,200.2			56	1,200.2
Interface Units	56	157.2			56	157.2
Cable Sets	56	20.5			56	20.5
Mounts	56	39.8			56	39.8
Installation (OMA)				(291.0)		(291.0)
TOTAL		2,143.3				2,143.3

METHOD OF IMPLEMENTATION: A contract field team will modify airborne systems and depot testing system device.

KIT DELIVERY SCHEDULE:

INSTALLATION SCHEDULE:

* Prototype installation

CLASSIFICATION**REPORTS CONTROL SYMBOL**
DD-COMP (AR) 1082**AIRCRAFT MODIFICATION****DATE** 11 Dec 80**APPROPRIATION/BUDGET ACTIVITY**
APA/2 (SSN AZ2100)**MODIFICATION TITLE AND NO.**
Propeller Reversing Control, PIP \$1-79-01-1019**AIRCRAFT AFFECTED:** RV-1D

DESCRIPTION/ JUSTIFICATION: Type of Improvement - Mission Safety. The resulting improved control circuitry for reversing propeller pitch on RV-1D (Mohawk) aircraft will insure simultaneous reversal of both propellers during the landing roll. The existing propeller reversing control circuitry has an established history of wire breakage at the propeller reversing switches mounted on the power level quadrants. Failure of either left or right circuit may cause loss of aircraft directional control. Since 1970, four OV-1 aircraft reportedly incurred major damage as a result of this type of failure; one of the Mohawks was a total loss. All non-recurring effort for the development, design, prototype and test of this modification will be funded by PIP 1-79-01-1018.

DEVELOPMENT STATUS: Modification Kits will be installed at DS maintenance level as directed by normal priority MWO. 100 manhours is considered necessary for a kit application.

MILESTONES:FY 82FY 83

Contract Award

2Q 82

Delivery Starts

4Q 82

Kits: Installation Start

1Q 83

Kits: Installation Completed

4Q 83

PROJECT FINANCIAL PLAN: (Amounts in thousands of dollars)FY 82FY 83

(APA) Kits

49.0

Installation (OMA)

(111.0)

PROPELLER REVERSING CONTROL

PIP # 1-79-01-1019

Exhibit P-3a
Page 2 of 2

BASIS FOR COST ESTIMATE: (Amounts in thousands of dollars)

	FY 82		FY 83		TOTAL PROGRAM	
	QTY	COST	QTY	COST	QTY	COST
Kits APA	28	49.0			28	49.0
Installation (OMA)			(28)	(111.0)	(28)	(111.0)
TOTAL	28	49.0			28	49.0

METHOD OF IMPLEMENTATION:

Modification kits will be installed at DS Maintenance.

KIT DELIVERY SCHEDULE:

FY 82				FY 83			
1	2	3	4	1	2	3	4
			6	7	7	8	

KIT INSTALLATION SCHEDULE:

FY 83			
1	2	3	4
6	7	7	8

CLASSIFICATION

REPORTS CONTROL SYMBOL DD-COMP (AR) 1002		AIRCRAFT MODIFICATION		DATE 11 Dec 80	
APPROPRIATION/BUDGET ACTIVITY APA/2			MODIFICATION TITLE AND NO. AN/ALQ-147A(V)2 Countermeasure Set 1-75-01-0827		
AIRCRAFT AFFECTED: RV-1D					
DESCRIPTION/JUSTIFICATION: Type of Improvement - Operational Capability. The AN/ALQ-147A(V)2 is an on-board device attached to the aft end of the 150 gallon drop tank which can be programmed to defeat the guidance systems of infrared missiles. The AN/ALQ-147A(V)2 is an improved version of the basic AN/ALQ-147.					
DEVELOPMENT STATUS: Initiate Phase I Engineering Airframe, Mar 78 ECP Approval, Nov 78					
MILESTONES:					
		<u>FY 78</u>	<u>FY 79</u>	<u>FY 80</u>	
AN/ALQ-147A(V) 2 Cont Awd		Jul 78			
Prod Lead Time		21 months			
AN/ALQ-147A(V)2 Delivery Start		3Q FY 80			
Airframe Mod Kit Cont Awd			3Q FY 79		
Prod Lead Time			6 months		
Airframe Mod Kits Del Starts			1Q FY 80		
Quick Look II Airframe					
Contract Awd				2Q FY 80	
PROJECT FINANCIAL PLAN: (Amounts in thousands of dollars)					
<u>FY 77</u>	<u>FY 78</u>	<u>FY 79</u>	<u>FY 80</u>	<u>FY 82</u>	<u>TOTAL PROGRAM</u>
<u>QTY</u> <u>COST</u>	<u>QTY</u> <u>COST</u>	<u>QTY</u> <u>COST</u>	<u>QTY</u> <u>COST</u>	<u>QTY</u> <u>COST</u>	<u>QTY</u> <u>COST</u>
2,056.0	980.0	588.0	28.0	21.4	3,673.4

DRST-C Form
1 Apr 78

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Edition of 1 May 76, may be used.

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CLASSIFICATION

EXHIBIT P- 3a

AN/ALQ-147A(V)2 COUNTERMEASURE SET
PIP # 1-75-01-0827

BASIS FOR COST ESTIMATE: (Amounts in thousands of dollars)

	FY 77		FY 78		FY 79		FY 80		FY 81		FY 82		TOTAL PROGRAM	
	QTY	COST	QTY	COST	QTY	COST	QTY	COST	QTY	COST	QTY	COST	QTY	COST
Non-Recurring		1,081.0		417.0		515.0								2,013.0
AN/ALQ-147A(V)2 Sys	13	909.0	10	563.0									23	1,472.0
STE	9	66.0											9	66.0
Airfr Mod Kits					10	48.0							10	48.0
Conv Installations					6	25.0	4	28.0			2	21.4	12	74.4
Installation (OMA)									(22)	(55.0)			(22)	(55.0)
TOTAL		2,056.0		980.0		588.0		28.0				21.4		3,673.4

METHOD OF IMPLEMENTATION: Airframe modification kits will be installed by depot contract teams and during the Quick Look II Conversion. FY 78 and FY 79 costs for implementation of twelve airframe mod kits are included in the Quick Look II Conversion program.

KIT DELIVERY SCHEDULE:

	FY 79				FY 80				FY 81				FY 84			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
1*					3	3	1		10				2			

INSTALLATION SCHEDULE:

	FY 80				FY 81				FY 84			
	1	2	3	4	1	2	3	4	1	2	3	4
Field	1*				10							
Production Incorporation	3	3		8	2				2			

*Proof kit

PROJECTS CONTROL SYMBOL DD-COMP (AR) 1092	AIRCRAFT MODIFICATION	DATE 11 Dec 80
APPROPRIATION/BUDGET ACTIVITY APA/2.. (SSN - AZ2100)		MODIFICATION TITLE AND NO. AN/USQ-61 () Digital Data Set, PIP #1-80-01-1165
AIRCRAFT AFFECTED: RV-1D		
DESCRIPTION/JUSTIFICATION: The purpose of the PIP is for an accelerated Quick Look II Data Link improvement program. Improved supportability and operational performance will result from replacement of the AN/ART-41A transmitter and the R-2057 receiver (components of the USQ-61) with the AN/ARC-164(V) 12 transmitter.		
DEVELOPMENT STATUS: The late start FY 79 program effort will incorporate the improved data link design into the technical data package of the new contract with UTL.		
MILESTONES:	<u>FY 79</u>	<u>FY 80</u>
ECP Contract Award (Data Link)	Aug 79	<u>FY 81</u>
ECP Contract Award (Airframe)	Apr 79	
Data Link ECP Approval	Jul 79	
Airframe ECP Approval	Sep 79	
Contract Award for Data Link Kits	Jan 79	2Q
Contract Award for Airframe Kits		3Q/4Q (FLD KITS)
Data Link Kit Delivery Starts		1Q
Airframe Kit Delivery Starts		1Q
Field Application Starts		2Q
Field Application Complete		2Q
PROJECT FINANCIAL PLAN: (Amounts in thousands of dollars)		
Prior Yrs <u>Qty</u> <u>Amt</u>	FY80 <u>Qty</u> <u>Amt</u>	FY81 <u>Qty</u> <u>Amt</u>
FY82 <u>Qty</u> <u>Amt</u>	TOTAL <u>Qty</u>	Program <u>Amt</u>
609.0	1,604.0	8.2
		2,221.2

AN/USQ-61() DIGITAL DATA SET, IMPROVED
PIP #1-80-01-1185

Exhibit P-3a
Page 2 of 2

BASIS FOR COST ESTIMATE: (Amounts in thousands of dollars)

	FY 79		FY 80		FY 82		TOTAL PROGRAM	
	QTY	COST	QTY	COST	QTY	COST	QTY	COST
Data Link ECP		135.0						135.0
AN/ARC-164 R/T	2	34.1					2	34.1
AN/ARC-164 Contrl Box	2	6.0					2	6.0
Shock Mt Rack	2	4.0					2	4.0
AN/ARC-164(V)12 Trans		386.9						386.9
Retrofit Kits	2	40.0					2	40.0
Non-Recurring		3.0		26.0				29.0
UTL Tech Docu DMWR				40.0				40.0
Modem Ret Kit			23	92.0			23	92.0
AN/ARC-164 HDWE			36	828.0			36	828.0
STE-AN/ARC-164			5	65.0			5	65.0
LL Parts/Connectors				39.3				39.3
EMC Filter ECO				53.2				53.2
PP-7036A Per Sply				149.5				149.5
Cable Retrofit Kit				20.0				20.0
Antenna Kits			16	16.0			16	16.0
Cost Growth/Exigencies				275.0				275.0
Airframe Kits					2	8.2	2	8.2
TOTAL		609.0		1,604.0		8.2		2,221.2

METHOD OF IMPLEMENTATION: The UTL data link effort in FY 80 will concentrate on the fabrication of retrofit kits for installation in the field. Grumman will concentrate on fabrication of airframe retrofit kits.

DELIVERY SCHEDULE:

Airframe Kits

INSTALLATION SCHEDULE:

Airframe Kits (12)

FY 81			
1	2	3	4
12			

1-98 - 1/15/81

PROJECT CONTROL SYMBOL DD COMP (AR) 1092	AIRCRAFT MODIFICATION	DATE 11 Dec 80
APPROPRIATION/BUDGET ACTIVITY APA/2 (SSN AZ2100)	MODIFICATION TITLE AND NO. STALL WARNING SYS, PIP # 1-82-01-1115	

AIRCRAFT AFFECTED: RV-1D

DESCRIPTION/JUSTIFICATION: Type of Improvement - Mission Safety. This is a directed safety-of-flight modification which will retrofit the RV-1D aircraft with a Stall Warning System to alert the pilot of impending wing stall, thereby improving the RV-1 flight safety.

DEVELOPMENT STATUS:

Project Initiated (ECP Prototyp/Award)	2Q82	
Testing - EMI/EMC and AQS	1Q83	2Q83
IPR/PROD Decision (ECP Approval)	2Q83	

MILESTONES:

	FY 83 EST DATE	FY 84 EST DATE	FY 85 EST DATE
Production Contract Award (HDW)	3Q83		
Production Contract Award (AF Kits)	3Q83		
MOU Negotiated		1Q84	
First Pdn Hdw Delivered		1Q84	
First Pdn AF Kits Delivered		1Q84	
First Kit Applied		1Q84	
Last Kit Applied		4Q84	
Data Collection Eval Complete			2Q85

PROJECT FINANCIAL PLAN: (Amounts in thousands of dollars)

	FY 83		FY 84		TOTAL	
Qty	Amt	Qty	Amt	Qty	Amt	
18	258.9	10	122.0	28	380.9	

STALL WARNING SYSTEM
PIP #1-82-01-1115

BASIS FOR COST ESTIMATE: (Amount in thousands of dollars)

	FY 83		FY 84		TOTAL	
	QTY	COST	QTY	COST	QTY	COST
APA:						
Stall Warning Unit	18	139.8	10	75.6	28	215.4
Airframe Kits	18	83.9	10	35.3	28	119.2
STE	3	11.4	1	4.0	4	15.4
Spares	3	23.8	1	7.1	4	30.9
(OMA)						
Instln./Kit Application			(28)	(179.0)	(28)	(179.0)
	18	258.9	10	122.0	28	380.9

METHOD OF IMPLEMENTATION: Modification will be accomplished at direct support maintenance via MWO by Contractor team.

KIT DELIVERY SCHEDULE:

	FY 84			
	1	2	3	4
	7	7	7	7

INSTALLATION SCHEDULE:

	FY 84			
	1	2	3	4
	14	7	7	

CLASSIFICATION

FY 82 BUDGET ESTIMATE

REPORTS CONTROL SYMBOL
DD-COMP (AM) 1002

AIRCRAFT MODIFICATION

DATE 15 Dec 80

APPROPRIATION/BUDGET ACTIVITY
APA/2MODIFICATION TITLE AND NO.
Glide Slope/Marker Beacon (R-1963)

AIRCRAFT AFFECTED: UR-1, OV-1, RU-21, U-21, CH-54, RV-1

DESCRIPTION/JUSTIFICATION: In terminal areas, the Instrument Landing System (ILS) is used to effect Instrument Flight Rule (IFR) landings. This system is managed in CONUS by the FAA. The R-1963 meets all FAA requirements for providing 150KHz adjacent channel spacing. Radio frequency congestion in West Germany and in high density areas in the United States makes it necessary to implement 50KHz split channel assignment to accommodate new facilities in these areas.

	UR-1	OV-1	RU-21	CH-54	RV-1	U-21	
Project Initiated	3/76	4/76	4/76	3/76	4/76	4/76	
Contract Award (Kits)	3/77	1/79	4/79	3/78	1/79	4/79	
Contract Award (GFE)	PY	PY	PY	PY	PY	PY	
1st Kit Delivery	1/79	2/80	2/80	3/80	2/80	4/80	
Last Kit Applied	1/82	1/83	4/82	3/83	1/83	3/82	
APA	PY	FY 80	FY 81	FY 82	FY 83	FY 84	TOTAL
Financial Plan	2.760	.036	-0-	.165	.169	.182	3.312

BASIS FOR COST ESTIMATE (Amounts in millions of dollars)

	PRIOR YEARS		FY 80		FY 81		FY 82		FY 83		FY 84		TOTAL	
	QTY	AMT	QTY	AMT	QTY	AMT	QTY	AMT	QTY	AMT	QTY	AMT	QTY	AMT
Nonrecur		1.135												1.135
Kits	779	.764	2	.036			8	.020	6	.020	6	.022	201	.822
GFE	683	.851					6	.145	6	.149	6	.160	783	1.314
TOTAL APA		2.760		.036				.165		.169		.182		3.312

OWA															
Nonrecur		(.656)		(.041)		(.037)									
Installation	180	(.103)	154	(.289)	242	(.899)	111	(.566)	5	(.030)	36	(.036)	728	(1.922)	

DDIT-C Form
1 Apr 76

2075

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P-1 SHOP LIST
1-101PAGE NO.
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CLASSIFICATION

EXHIBIT P-3a

Glide Slope/Marker Beacon (R-1963)

Exhibit P-3a
page 2

Basis for Cost Estimates:

(Amounts in millions of dollars)

	PRIOR YEARS		FY 80		FY 81		FY 82		FY 83		FY 84		TOTAL	
	QTY	AMT	QTY	AMT	QTY	AMT	QTY	AMT	QTY	AMT	QTY	AMT	QTY	AMT
<u>APA</u>														
Nonrecur														
UH-1		1.135												1.135
<u>KITS</u>														
U-21	103	.008											103	.008
RU-21	36	.114											36	.114
OV-1	141	.371	2	.036			6	.018	6	.020	6	.022	161	.467
RV-1	26	.016					2	.002					28	.018
UH-1	400	.161											400	.161
CH-54	73	.094											73	.094
TOTAL KITS	779	.764	2	.036			8	.020	6	.020	6	.022	801	.862
<u>GFE</u>														
U-21	103	.117											103	.117
OV-1	(1) -	.141					6	.141	6	.151	6	.161	18	.594
UH-1	465	.443											465	.443
RV-1	26	.047					2	.007					28	.054
CH-54	89	.113											89	.113
TOTAL GFE	683	.861					8	.148	6	.151	6	.161	703	1.321
TOTAL APA		2.760		.036				.168		.171		.183		3.318

(1) Does not include prior year quantities which are not available.

CLASSIFICATION

FY 82 BUDGET ESTIMATE

REPORTS CONTROL SYMBOL
DD-COMP (AR) 1092

AIRCRAFT MODIFICATION

DATE 15 Dec 80

APPROPRIATION/BUDGET ACTIVITY
APA/2MODIFICATION TITLE AND NO.
Glide Slope/Marker Beacon R-1963

Page 3

BASIS FOR COST ESTIMATES: (Amounts in millions of dollars)

	PRIOR YEARS		FY 80		FY 81		FY 82		FY 83		FY 84		TOTAL	
	QTY	AMT	QTY	AMT	QTY	AMT	QTY	AMT	QTY	AMT	QTY	AMT	QTY	AMT
INSTALLATION (OMA)														
U-21	103	(.008)											103	(.008)
BU-21					6	(.028)	19	(.090)					25	(.118)
OV-1					84	(.416)	57	(.342)	5	(.030)	36	(.036)	182	(.824)
RV-1					17	(.075)	2	(.009)					19	(.084)
UH-1	77	(.095)	154	(.289)	65	(.138)							296	(.522)
CH-54					70	(.242)	33	(.125)					103	(.367)
SUBTOTAL	180	(.103)	154	(.289)	242	(.899)	111	(.566)	5	(.030)	36	(.036)	728	(1.923)
NONRECUR (OMA)														
U-21		(.155)				(.006)								(.161)
BU-21		(.274)		(.010)										(.284)
OV-1		(.328)				(.018)								(.346)
RV-1				(.010)										(.010)
UH-1		(.099)		(.011)		(.013)								(.123)
CH-54				(.010)										(.010)
SUBTOTAL		(.826)		(.041)		(.037)								(.934)

	FY 80				FY 81				FY 82				FY 83				FY 84				TOTAL
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	
Kit Delivery Schedule					21	20	29	90	20	24		2									
Kit Install Schedule					32	36	142	127	108	44	34	34	20	12	2		6				

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1 Apr 76

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CLASSIFICATION

EXHIBIT P- 3a

CLASSIFICATION

FY 82 BUDGET ESTIMATE

REPORTS CONTROL SYMBOL
DD-COMP (AR) 1992

AIRCRAFT MODIFICATION

DATE 15 Dec 80

APPROPRIATION/BUDGET ACTIVITY

APA/2

MODIFICATION TITLE AND NO.

AN/ARC-164 Radio

AIRCRAFT AFFECTED: RV-1, OV-1, RU-21, U-21, CH-47 . (AH-1 is covered in Cobra Modernization P-3a; EH-1H is covered in Quick Fix P-3a.)

Description/Justification: Type of improvement - Operational Capability. Need exists to provide 25KHz channel spacing for the 325-400MHz band of the frequency spectrum. Most Army aircraft use the AN/ARC-51BX radio to fulfill the UHF-AM radio requirement. However, the AN/ARC-51BX has 50KHz channel spacing while a securable radio with 25KHz spacing is now required. The AN/ARC-164 radio is securable and has 25KHz channel spacing and has been selected to replace the AN/ARC-51BX.

Development Status: The RT-1167/ARC-164 has been developed by the Air Force and has successfully completed first article testing by the Air Force. The Army has completed a three-month service test by TECOM (Apr through Jun 79) with only minor problems detected.

The following milestones for procurement of GFE are provided. All contracts for the radio are through VLEP of funds to the Air Force.

	FY 77 & Prior Nov 74	FY 78	FY 79	FY 80	FY 81	FY 82	FY 83
GFE Contract Award							
Initial Contract							
Leadtime (16 mo)							
Production Rate (50 per mo)							
Follow-on Reprocurement Contracts		Feb 78	1Q	1Q	1Q	1Q	1Q
Deliveries	Apr 76	1Q 80	3Q 80	3Q 81	3Q 82	3Q 82	3Q 83

PIP NO.

RU-21 1-78-01-0868

U-21 1-78-01-0868

RV-1 1-78-01-0866

OV-1 1-78-01-0866

SSN

AZ2900

AA0550

AZ2100

AZ3530

PIP NO.

CH-47C

CH-54

UH-1

1-79-01-0885

1-79-01-0885

1-78-01-0855

SSN

AA0250

AA0300

AA0600

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CLASSIFICATION

EXHIBIT P-31

AN/ARC - 164 Radio

Exhibit P-3a
page 2MILESTONES FOR AIRFRAME:

	<u>UH-1</u>	<u>RV-1</u>	<u>U-21</u>	<u>RU-21</u>	<u>OV-1</u>	<u>CH-47</u>	<u>CH-54</u>
Contract Award for ECP	3/78	4/78	1/79	3/79	4/78	4/78	2/79
ECP Approval	4/79	1/80	2/80	4/80	1/80	4/80	1/81
Contract Award Kits		2/80	4/80	1/81	2/80	1/81	
Production Rate Kits		9 mo	9 mo	3 mo	9 mo	16 mo	
Leadtime Kits		5 mo	6 mo	7 mo	5 mo	6 mo	
1st Kit Delivery		4/81	3/82	4/81	3/81	2/82	2/83
Installation Complete		1/83	3/84	3/83	4/84	4/84	4/87

Basis for Cost Estimate (Amounts in millions of dollars)

	<u>PRIOR YEARS</u>		<u>FY 80</u>		<u>FY 81</u>		<u>FY 82</u>		<u>FY 83</u>		<u>FY84</u>		<u>TOTAL</u>	
	<u>QTY</u>	<u>AMT</u>	<u>QTY</u>	<u>AMT</u>	<u>QTY</u>	<u>AMT</u>	<u>QTY</u>	<u>AMT</u>	<u>QTY</u>	<u>AMT</u>	<u>QTY</u>	<u>AMT</u>	<u>QTY</u>	<u>AMT</u>
Nonrecur (APA)		.508												.508
Kits	50	.108	190	2.025	165	.370	8	.016	6	.013	1109	1.227	1528	3.759
GFE	254	1.136	85	.795	-	-	6	.036	6	.041	807	4.967	1158	6.976
TOTAL APA		1.752		2.820		.370		.053		.054		6.194		11.243

OMA

Installation			27	(.134)	135	(.588)	153	(.950)	172	(1.124)	517	(3.365)
Nonrecur	(1.514)		(.108)	(.223)		(.095)		(.032)				(1.972)

AN/ARC - 164 Radio

Exhibit
Page 3Basis for Cost Estimate (Con't)
(Amounts in millions of dollars)

	PRIOR YEARS		FY 80		FY 81		FY 82		FY 83		FY 84		TOTAL	
	QTY	AMT	QTY	AMT	QTY	AMT	QTY	AMT	QTY	AMT	QTY	AMT	QTY	AMT
<u>APA</u>														
<u>Nonrecur</u>														
CH-47		.306												.306
UH-1		.014												.014
OV-1		.188												.306
TOTAL		.508												.508
<u>KITS</u>														
U-21											103	.451	103	.451
RU-21		.006	13	.046									13	.052
OV-1			90	.950			6	.012	6	.013	6	.014	108	.989
RV-1			15	.024			2	.004					17	.028
UH-1											1000	.762	1000	.762
CH-47	50	.102			165	.370							215	.472
CH-47			72	1.005									72	1.005
TOTAL KITS	50	.108	190	2.025	165	.370	8	.016	6	.013	1109	1.227	1528	3.759
<u>GFE</u>														
U-21											119	.658	119	.658
OV-1							6	.036	6	.041	6	.044	18	.122
UH-1											682	4.265		4.265
CH-47	254	1.136											254	1.136
CH-54			85	.795									85	.795
TOTAL GFE	254	1.136	85	.795			6	.036	6	.041	807	4.967	1158	6.976
TOTAL APA		1.752		2.820		.370		.053		.054		6.194		11.243

CLASSIFICATION

FY 82 BUDGET ESTIMATE

REPORTS CONTROL SYMBOL DD-COMP (AR) 1092		AIRCRAFT MODIFICATION										DATE 15 Dec 80	
APPROPRIATION/BUDGET ACTIVITY APA/2						MODIFICATION TITLE AND NO. AN/ARC-164						Page 4	
BASIS FOR COST ESTIMATES: (Amounts in millions of dollars)													
PRIOR YEARS		FY 80		FY 81		FY 82		FY 83		FY 84		TOTAL	
QTY	AMT	QTY	AMT	QTY	AMT	QTY	AMT	QTY	AMT	QTY	AMT	QTY	AMT
INSTALLATION (OMA)													
U-21								18	(.218)	55	(.251)	103	(.469)
RU-21						12	(.048)	1	(.004)			13	(.052)
OV-1				27	(.134)	63	(.378)	3	(.018)	6	(.036)	99	(.566)
RV-1						10	(.048)	5	(.024)			15	(.072)
UH-1								*	(.399)	*	(.585)	*	(1.583)
CH-54								26	(.059)	46	(.104)	72	(.163)
CH-47						50	(.114)	100	(.228)	65	(.148)	215	(.490)
SUBTOTAL				27	(.134)	135	(.588)	153	(.950)	172	(1.124)	517	(3.368)
NONRECUR (OMA)													
U-21	(.254)	(.010)		(.014)		(.031)		(.008)					(.317)
RU-21	(.246)			(.032)									(.278)
OV-1	(.415)	(.020)		(.036)									(.471)
RV-1		(.008)		(.010)		(.010)							(.028)
UH-1	(.337)			(.017)									(.354)
CH-54	(.247)	(.020)		(.082)		(.024)		(.024)					(.397)
CH-47	(.015)	(.050)		(.032)		(.030)							(.127)
SUBTOTAL		(1.514)	(.108)	(.223)		(.095)		(.032)					(1.972)
		FY 80		FY 81		FY 82		FY 83		FY 84		TOTALS	
		1	2	3	4	1	2	3	4	1	2	3	4
Kit Delivery Schedule						27	26	16	39	61	50	56	80
Kit Install Schedule						27	18	18	49	50	34	40	55
										54	34	59	55
												24	517

* Quantities of kits and GFE to be installed are not displayed or included in delivery or installation schedules. A total of 2728 Mod Kits and 2214 GFE (black boxes) are required for the UH-1, contract award date, and subsequent events, are not determinable.

DRST-C Form
1 Apr 78

2075

Edition of 1 May 76, may be used.

P-1 SHOPP LIST PAGE NO.
1-107 - 1/15/81

CLASSIFICATION

EXHIBIT P-3a

FY 82 Budget Estimate

ACTIVITY 2 - AIRCRAFT MODIFICATIONS					EXHIBIT P-3	
Reports Control Symbol DD-COMP(AR) 1092					Date: 11 Dec 80	
APPROPRIATION: APA/2 (SSN AA0150)						
MODEL: AH-1S MODIFICATION (1)	FY 1981		FY 1982		FY 1983	
	Quantity (2)	Amount (Thousands) (3)	Quantity (4)	Amount (Thousands) (5)	Quantity (6)	Amount (Thousands) (7)
AH-1G/S Conversion/Modernization	64	111,556	-	-	-	-
** HM+P Suppressor	64	1,006	-	-	-	-
* IR Jammer, ALQ-144	64	1,748	-	-	-	-
Improved AHRS	-	1,088	18	1,066	78	3,300
Radar Jammer, ALQ-136	40	5,134		22,312		20,649
Wire Strike Protection System	-	-	484	2,366	483	2,551
* Laser Warning Receiver (page 1-118)	-	808	100	5,647	255	5,953
* NOE Communications (page 1-140)	-	369	150	1,709	418	5,625
FACTS/ITMS	-	-	-	-		79,115
TOTAL		121,700		33,100		117,193
*Consolidated P-3a's						
**P-3a not included. No FY 82-83 funds.						

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FY 82 BUDGET ESTIMATE

CLASSIFICATION						
REPORTS CONTROL SYMBOL DD-COMP (AR) 1092	AIRCRAFT MODIFICATION		DATE 11 Dec 80			
APPROPRIATION/BUDGET ACTIVITY APA/2 (SSN AA0150)		MODIFICATION TITLE AND NO, Improved Attitude Heading Reference System PIP 1-80-01-0923				
AIRCRAFT AFFECTED - AH-1S						
Description/Justification: Type of Improvement - Operational Capability The Improved Attitude Heading Reference System (AHRS) will provide the modernized AH-1S with a high accuracy heading input to the AN/ASN-128 Doppler for tactical map-of-the-earth (NOE) battlefield operations.						
Development Status: Qualification of prototype units, system tests and initial flight qualification will be accomplished by the contractor.						
Milestones:	FY 80	FY 81	FY 82	FY 83	FY 84	FY 85
Engineering Contract Award	3Q 81	3Q 81				
Production Contract Award			1Q 83	1Q 83	1Q 84	1Q 85
Kit Delivery Starts			1Q 84	2Q 84	2Q 85	1Q 86
First Kit Applied			2Q 85	3Q 84	3Q 85	2Q 86
Kit Installation Complete						3Q 86
Projected Financial Plan:	FY 80	FY 81	FY 82	FY 83	FY 84	FY 85
	2,651.0	1,088.0	1,066.0	3,300 0	2,348.0	3,042.0
Basis for Cost Estimate: (Amounts in thousands of dollars)						
	FY 80	FY 81	FY 82	FY 83	FY 84	FY 85
	Qty Amt	Qty Amt	Qty Amt	Qty Amt	Qty Amt	Qty Amt
Non-Recurring:						
Engineering Design	- 1,357.0	324.0				
Testing	- 1,294.0					
Other	-	764.0	344.0			
Recurring:						
AHRS			18 691.9	78 3,136.3	50 2,231.2	61 2,890.9
Kits			18 30.1	78 163.7	50 116.8	61 151.1

DHS-C Form
1 Apr 78

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CLASSIFICATION

EXHIBIT P- 3a

FY 82 BUDGET ESTIMATE

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APA/2 (SSN AA0150)

Improved Attitude Heading Reference System PIP 1-80-01-0923

	<u>FY 80</u>		<u>FY 81</u>		<u>FY 82</u>		<u>FY 83</u>		<u>FY 84</u>		<u>FY 85</u>		<u>FY 86</u>	
	<u>Qty</u>	<u>Amt</u>	<u>Qty</u>	<u>Amt</u>	<u>Qty</u>	<u>Amt</u>	<u>Qty</u>	<u>Amt</u>	<u>Qty</u>	<u>Amt</u>	<u>Qty</u>	<u>Amt</u>	<u>Qty</u>	<u>Amt</u>
Installation (OMA)									36	(258.0)	72	(516.1)	99	(709.6)
TOTAL	-	2,651.0		1,088.0	18	1,066.0	78	3,300.0	50	2,340.0	61	3,042.0		

Method of Implementation: Kits will be installed in the field by contractor teams. Installation is estimated at 40 hours per aircraft.

Delivery Schedule:

	<u>FY 84</u>				<u>FY 85</u>				<u>FY 86</u>			
	<u>1</u>	<u>2</u>	<u>3</u>	<u>4</u>	<u>1</u>	<u>2</u>	<u>3</u>	<u>4</u>	<u>1</u>	<u>2</u>	<u>3</u>	<u>4</u>
Kits	18	18	18	18	18	18	18	20	30	31		

Installation Schedule:

	<u>FY 84</u>				<u>FY 85</u>				<u>FY 86</u>			
	<u>1</u>	<u>2</u>	<u>3</u>	<u>4</u>	<u>1</u>	<u>2</u>	<u>3</u>	<u>4</u>	<u>1</u>	<u>2</u>	<u>3</u>	<u>4</u>
Field Installation	18	18	18		18	18	18	18	20	30	31	

FY 82 Budget Estimate

CLASSIFICATION		FY 82 Budget Estimate	
REPORTS CONTROL SYMBOL DD-COMP (AR) 1092	AIRCRAFT MODIFICATION		DATE .11 Dec 80
APPROPRIATION/BUDGET ACTIVITY APA/2		MODIFICATION TITLE AND NO, AN/ALQ-136(V)1 Radar Jammer, PIP#: 1-79-01-0976	

AIRCRAFT AFFECTED: AH-1S (SSN: AA0150)

DESCRIPTION/JUSTIFICATION: Type of Improvement - Operational Capability. The AN/ALQ-136 (XE-2) Radar Jammer is designed to provide protection for AH-1S aircraft against radar directed air defense threat weapons. System consists of a receiver/transmitter unit, an antenna system, an operator control unit and an installation kit.

DEVELOPMENT STATUS: DT/OT II - complete SEP 79
DEVA IPR - SEP 80

<u>MILESTONES:</u>	<u>FY 79</u>	<u>FY 80</u>	<u>FY 81</u>	<u>FY 82</u>
Engr Initiated	SEP 79			
ECP Approval		3Q81		
Mod Kit Contract Award				1Q 82
Production Lead Time				6 months
Mod Kit Delivery Start				4Q 82
Kit Installation Start				2Q 83
AN/ALQ-136 Cont. Award		SEP 80	3Q 81	

PROJECT FINANCIAL PLAN: (Amounts in thousands of dollars)

<u>FY 79</u>		<u>FY 80</u>		<u>FY 81</u>		<u>FY 82</u>		<u>FY 83</u>		<u>FY 84</u>		<u>TOTAL PROGRAM</u>	
<u>QTY</u>	<u>COST</u>	<u>QTY</u>	<u>COST</u>	<u>QTY</u>	<u>COST</u>	<u>QTY</u>	<u>COST</u>	<u>QTY</u>	<u>COST</u>	<u>QTY</u>	<u>COST</u>	<u>QTY</u>	<u>COST</u>
	765.0		10,595.0		5,134.0		22,312.0		20,649.0		915.7		50,370.7

AN/ALQ-136(V)1 Radar Jammer
1-79-01-0976

Exhibit P-3a
Page 2 of 2

BASIS FOR COST ESTIMATE: (Amounts in thousands of dollars)

	FY 79		FY 80		FY 81		FY 82	
	QTY	COST	QTY	COST	QTY	COST	QTY	COST
Non-Recurring								
AN/ALQ-136 Sys			40	4,250.0	40	414.0	120	2,646.8
STE				804.0				1,243.7
ECP MWO/A Kits		755.0		626.0			200	848.9
A Kit Instl (OMA)								
		765.0		10,595.0		5,134.0		22,312.0

	FY 83		FY 84		FY 85		TOTAL PROGRAM	
	QTY	COST	QTY	COST	QTY	COST	QTY	COST
Non-Recurring		1,626.8						8,937.6
AN/ALQ-136 Sys	110	17,203.9					310	44,411.5
STE		1,322.5						3,370.2
ECP/MWO A Kits	110	495.8	194	915.7			504	3,651.4
A Kit Instl	(189)	(510.0)	(189)	(543.0)	(126)	(287.0)	(504)	(1,440.0)
		20,649.0		915.7				60,370.7

METHOD OF IMPLEMENTATION: A Kits will be installed in the field by depot/contract teams. Estimated installation time is 80 hrs per airframe kit.

DELIVERY SCHEDULE

FY 82			FY 83			FY 84			FY 85			
1	2	3	4	1	2	3	4	1	2	3	4	
			50	50	50	60	40	40	30	50	50	34

KIT INSTALLATIONS SCHEDULE:

FY 83			FY 84			FY 85		
1	2	3	4	1	2	3	4	1
30	50	54	55	45	45	50	49	40

CLASSIFICATION

FY 82 BUDGET ESTIMATE

REPORTS CONTROL SYMBOL
DD-COMP (AR) 1092

AIRCRAFT MODIFICATION

DATE 11 Dec 80

APPROPRIATION/BUDGET ACTIVITY
APA/2 (SSN AA0150)MODIFICATION TITLE AND NO. Wire Strike Protection
System, PIP # 1-79-01-0922Aircraft Affected - AH-1SDescription/Justification: Type of Improvement - Safety

The Wire Strike Protection System will provide the AH-1S with a wire cutting/deflecting installation to eliminate the dangers involved when striking wires. The cutting device will be installed on AH-1 helicopters performing NOE Missions. It will protect the helicopter from damage caused by horizontal conventional telephone and power line wire strikes to the landing gear, turret, and the forward fuselage up to but not including the path of the rotating main rotor blade.

Development Status: The wire cutting device has been developed by Bristol Aerospace Ltd, Winnipeg, Canada, under contract from the Canadian Armed Forces for Canadian OH-58 Helicopters. Numerous other companies have developed and tested similar hardware. Army has conducted wire protection tests on a suspended OH-58. AH-1 has had no prior engineering or test. This plan will include; (1) feasibility study, (2) prototype installation, test and data acquisition, followed by (3) production and installation. Provision will be made for operational test by TRADOC as required and for TECOM participation in test program.

Milestones:

	<u>FY 80</u>	<u>FY 81</u>	<u>FY 82</u>	<u>FY 83</u>
Engineering/Design Contract Award	4Q 80	2Q 81		
Production Contract Award			1Q 82	1Q 83
1st Kit Delivery			3Q 82	4Q 83
1st Kit Application			3Q 82	4Q 83
1st Kit Application				4Q 84

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CLASSIFICATION

EXHIBIT P- 3a

FY 82 BUDGET ESTIMATE

CLASSIFICATION		AIRCRAFT MODIFICATION		DATE 11 Dec 80	
REPORTS CONTROL SYMBOL DD-COMP (AR) 1092					
APPROPRIATION/BUDGET ACTIVITY APA/2 (SSN AA0150)		MODIFICATION TITLE AND NO. Wire Strike Protection System, PIP # 1-79-01-0922			
<u>Projected Financial Plan:</u> (Amounts in thousands of dollars)		FY 82 2,366.0		FY 83 2,551.0	
<u>Basis for Cost Estimate:</u>		FY 80		FY 81	
		Qty Amt		Qty Amt	
		FY 82		FY 83	
		Qty Amt		Qty Amt	
		FY 84		FY 85	
		Qty Amt		Qty Amt	
<u>Non-Recurring:</u>					
Engineering Development (OMA)- (183.0) (1,321.0) (122.0) (10.0)					
and Evaluation					
TM/MWO Preparation (OMA) - (28.0) (30.0)					
Training - (9.0)					
<u>Recurring:</u>					
Wire Strike Kits 484 2,366.0 483 2,551.0					
Kit Installation (OMA) 150 (283.0) 407 (827.0) 410 (890.0)					
<u>TOTAL</u> 484 2,366.0 483 2,551.0					
<u>Method of Implementation:</u> Installation will be accomplished at TSARCON MWO activities using Depot and/or Contractor teams. Installation is estimated 16 hours per aircraft.					
<u>Delivery Schedule:</u>					
FY 82 FY 83 FY 84					
1 2 3 4 1 2 3 4 1 2 3 4					
Kits 90 90 99 99 99 99 98 98 98 97					
<u>Installation Schedule:</u>					
FY 82 FY 83 FY 84					
1 2 3 4 1 2 3 4 1 2 3 4					
Field Installation 60 90 101 102 102 102 102 102 103 103					

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CLASSIFICATION

EXHIBIT P-3a

FY 82 Budget Estimate

COMMUNICATION		FY 82 Budget Estimate	
FACTS CONTROL SYMBOL DD-COMP (AR) 1092		AIRCRAFT MODIFICATION	
APPROPRIATION/BUDGET ACTIVITY APA/2 (SSN AA0150)		DATE 11 Dec 80	
		MODIFICATION TITLE AND NO. FACTS/ITMS, PIP 1-81-01-0924	

Aircraft Affected: AH-1SDescription/Justification: Type of Improvement - Operational Capability

The AH-1S aircraft currently deployed have a limited capability during periods of reduced visibility (smoke, haze, aerosols, dust, dawn and dusk) and at night. The objective of this program is to improve the current Cobra TOW Missile Subsystem (N-65) by design, development and testing a Forward Looking Infrared (FLIR) Augmented Cobra TOW Sight (FACTS), Improved TOW Missile Subsystem (ITMS) for production and incorporation into AH-1S aircraft. The FACTS/ITMS program focuses on the integration of a Thermal imaging sensor (Common FLIR Modules) into the Cobra Telescopic Sight Unit and includes a redesign of the Missile Control Amplifier electronics for compatibility with and employment of the TOW missiles and full caliber TOW (FCT)).

this project will provide the AH-1S helicopter with a substantially upgraded mission capability of detecting, acquiring, and engaging targets during periods of reduced visibility and at night. In addition to providing an enhanced TOW operational capability, the FACTS affords the capability of employing turret weapons (20mm, 7.62 or 40mm) at night and through battlefield obscurants and when employed in conjunction with the Modernized AH-1S fire control system, also provides a similar operational enhancement for the 2.75 rockets. Drawbacks are focused on a TOW subsystem weight increase of approximately 55 pounds.

Development Status: A 30 month development program is planned. A full scale engineering development contract is to be awarded in December 1980 to cover design, development and test of the Cobra FACTS system. A complete DT/OT test program will be conducted following initial contractor testing. During the development phase, the FACTS/ITMS capability will be integrated into five Airborne TOW Systems. Three of these will be utilized for bench and specification qualification while the remaining two systems are to be installed on AH-1S aircraft for airworthiness qualification, development and operational testing.

<u>Milestones:</u>	<u>FY 81</u>	<u>FY 82</u>	<u>FY 83</u>	<u>FY 84</u>	<u>FY 85</u>	<u>FY 86</u>
Development Contract Award	2Q 81	1Q 82	1Q 83			
Production Contract Award			4Q 83	1Q 84	1Q 85	1Q 86
Kit/Hardware Deliveries Start			3Q 85	2Q 86	2Q 87	1Q 88
1st Kit/Hardware Installation			3Q 85	3Q 86	3Q 87	2Q 88
Installation Complete						

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EXHIBIT P. 2

CLASSIFICATION		MODIFICATION		DATE 11 Dec 90	
REPORTS CONTROL SYMBOL DD-COMP (AR) 1092					
APPROPRIATION/BUDGET ACTIVITY APA/2 (SSN AA0150)		MODIFICATION TITLE AND NO. FACTS/ITMS, PIP 1-81-01-0924			
<u>Projected Financial Plan:</u> (Amounts in thousands of dollars)					
<u>FY 83</u>	<u>FY 84</u>	<u>FY 85</u>	<u>FY 86</u>	<u>TOTAL</u>	
79,115.1	106,423.4	68,014.0	23,616.7	277,169.2	
<u>Basis for Cost Estimate:</u>					
	<u>FY 83</u>	<u>FY 84</u>	<u>FY 85</u>	<u>FY 86</u>	
	<u>Qty</u> <u>\$</u>	<u>Qty</u> <u>\$</u>	<u>Qty</u> <u>\$</u>	<u>Qty</u> <u>\$</u>	
Special Test Equip (STE)	26 3,170.2	33 4,004.3	22 2,834.6	5 684.0	
FACTS/ITMS Black Box	213 75,618.2	272 102,008.1	163 64,911.1	54 22,851.1	
A "Kits"	213 326.7	272 411.0	163 246.3	54 81.6	
Kit Installation (OMA)				(272) (3,865.7)	
TOTAL	79,115.1	106,423.4	68,014.0	23,616.7	
	<u>FY 87</u>	<u>FY 88</u>	<u>GRAND TOTAL</u>		
	<u>Qty</u> <u>\$</u>	<u>Qty</u> <u>\$</u>	<u>Qty</u> <u>\$</u>		
Special Test Equip (STE)			86 10,693.1		
FACTS/ITMS Black Box			702 265,410.5		
A "Kits"			702 1,065.6		
Kit Installation (OMA)	(272) (4,105.5)	86 (1,378.5)	(630)		
TOTAL			277,169.2		

CLASSIFICATION

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EXHIBIT P-3a

FY 82 Budget Estimate

CLASSIFICATION		FY 82 Budget Estimate	
REPORTS CONTROL SYMBOL DD-COMP (AR) 1092	AIRCRAFT MODIFICATION		DATE 11 Dec 80
APPROPRIATION/BUDGET ACTIVITY APA/2 (SSN AA0150)		MODIFICATION TITLE AND NO. FACTS/ITNS, PIP 1-81-01-0924	

Method of Implementation: N65 subsystem components will be modified at a contractor facility, shipped to the field and installed on AH-1S aircraft by contractor maintenance teams.

Delivery Schedule:

	FY 85				FY 86				FY 87				FY 88			
Kits/Hardware	<u>1</u>	<u>2</u>	<u>3</u>	<u>4</u>	<u>1</u>	<u>2</u>	<u>3</u>	<u>4</u>	<u>1</u>	<u>2</u>	<u>3</u>	<u>4</u>	<u>1</u>	<u>2</u>	<u>3</u>	<u>4</u>
			36	54		68	68	68	68		68	68	68	68		68

Installation Schedule:

	FY 85				FY 86				FY 87				FY 88			
Field Installation	<u>1</u>	<u>2</u>	<u>3</u>	<u>4</u>	<u>1</u>	<u>2</u>	<u>3</u>	<u>4</u>	<u>1</u>	<u>2</u>	<u>3</u>	<u>4</u>	<u>1</u>	<u>2</u>	<u>3</u>	<u>4</u>
			18	54		68	68	68	68		68	68	68	68	18	

CLASSIFICATION

REPORTS CONTROL SYMBOL DD-COMP (AR) 1002		AIRCRAFT MODIFICATION		DATE 11 Dec 80	
APPROPRIATION/BUDGET ACTIVITY APA/2 (SSN: AA0150) (SSN: AZ3530)			MODIFICATION TITLE AND NO. AN/AVR-2, Laser Warning Receiver, PIP #1-80-01-0984 & PIP #1-80-01-0284		
AIRCRAFT AFFECTED: AH-1S					
DESCRIPTION/JUSTIFICATION: Type of Improvement - Operational Capability. The Laser Warning Receiver System is designed to functionally integrate with the AN/APR-39 Radar Warning Receiver to detect laser threat energy directed at aircraft and to provide audio and visual warning.					
DEVELOPMENT STATUS:					
ED Contract Award - 1Q FY 80					
DT/OT II - 3Q FY 81					
DEVA IPR - 2Q FY 82					
MILESTONES:					
		<u>FY 81</u>	<u>FY 82</u>	<u>FY 83</u>	
Contract Award ECP		1Q 81			
ECP Approval			2Q 82		
Cont Awd - A Kits			3Q 82		
Prod Lead Time			12 months		
Kit Del Start				3Q 83	
Kit Installation Start				4Q 83	
PROJECT FINANCIAL PLAN: (Amounts in thousands of dollars)					
<u>FY 81</u>	<u>FY 82</u>	<u>FY 83</u>	<u>FY 84</u>	<u>FY 85</u>	<u>TOTAL PROGRAM</u>
<u>COST</u>	<u>COST</u>	<u>COST</u>	<u>COST</u>	<u>COST</u>	<u>COST</u>
808.0	5,647.0	5,953.0	4,442.0	968.0	17,818.0

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CLASSIFICATION

EXHIBIT P- 3a

AVR-2, Laser Warning Receiver
1-80-01-0984

FY 82 Budget Request

Exhibit P-3a
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BASIS FOR COST ESTIMATE: (Amounts in thousands of dollars)

AH-1S	<u>FY 81</u>		<u>FY 82</u>		<u>FY 83</u>		<u>FY 84</u>	
	<u>QTY</u>	<u>COST</u>	<u>QTY</u>	<u>COST</u>	<u>QTY</u>	<u>COST</u>	<u>QTY</u>	<u>COST</u>
Non-Recurring		808.0		3,390.0		817.0		423.0
AN/AVR-2 Systems			100	1,652.0	235	4,140.0	175	3,275.0
STE				134.0		327.0		
Airframe Mod Kits			150	471.0	200	669.0	209	744.0
Installation (OMA)					(15)	(18.0)	(200)	(259.0)
		<u>808.0</u>		<u>5,647.0</u>		<u>5,953.0</u>		<u>4,442.0</u>
	<u>FY 85</u>		<u>FY 86</u>		<u>TOTAL PROGRAM</u>			
	<u>QTY</u>	<u>COST</u>	<u>QTY</u>	<u>COST</u>	<u>QTY</u>	<u>COST</u>		
Non-Recurring		113.0				5551.0		
AN/AVR-2 Systems	40	795.0			550	9862.0		
STE						461.0		
Airframe Mod Kits	16	60.0			575	1944.0		
Installation (OMA)	(225)	(309.0)	(135)	(197.0)	(575)	(783.0)		
TOTAL		<u>968.0</u>				<u>17,818.0</u>		

METHOD OF IMPLEMENTATION: Airframe modification kits will be installed in the field by depôt or commercial contract teams. Installation is estimated at 40 hours per aircraft for AH-1S.

<u>DELIVERY SCHEDULE:</u>	<u>FY 83</u>				<u>FY 84</u>				<u>FY 85</u>				<u>FY 86</u>			
	<u>1</u>	<u>2</u>	<u>3</u>	<u>4</u>	<u>1</u>	<u>2</u>	<u>3</u>	<u>4</u>	<u>1</u>	<u>2</u>	<u>3</u>	<u>4</u>	<u>1</u>	<u>2</u>	<u>3</u>	<u>4</u>
Kits			25	25	50	50	50	50	50	50	75	75	75			
<u>INSTALLATION SCHEDULE:</u>	<u>FY 83</u>				<u>FY 84</u>				<u>FY 85</u>				<u>FY 86</u>			
	<u>1</u>	<u>2</u>	<u>3</u>	<u>4</u>	<u>1</u>	<u>2</u>	<u>3</u>	<u>4</u>	<u>1</u>	<u>2</u>	<u>3</u>	<u>4</u>	<u>1</u>	<u>2</u>	<u>3</u>	<u>4</u>
Field Installation				15	50	50	50	50	50	50	50	75	75	60		

FY 82 BUDGET REVIEW

ACTIVITY 2 - AIRCRAFT MODIFICATIONS					EXHIBIT P-3	
Reports Control Symbol DD-COMP(AR) 1092					Date: 11 DEC 80	
APPROPRIATION: APA/2 (SSN AA0250)						
MODEL: CH-47 MODIFICATION (1)	FY 19 81		FY 19 82		FY 19 83	
	Quantity (2)	Amount (Thousands) (3)	Quantity (4)	Amount (Thousands) (5)	Quantity (6)	Amount (Thousands) (7)
Fiberglass Rotor Blades	77	25,690.0	92	28,262.0	20	7,825.0
Conversion of T-55-L-11D to 712 Engine	60	15,119.0	55	15,609.0	79	24,075.0
* XM - 130 General Purpose Dispenser (page 1-72)	162sys.	1,503.0				
* AN/ALQ-156 Missile Detector System (page 1-136)	50sys.	8,721.0	215 A/F 70 Sys	8,629.0		
CH-47D Modernization	9	147,667.0	10	130,000.0	15	195,500.0
<u>TOTAL</u>		198,700.0		182,500.0		227,400.0
* Consolidated P3a						

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FY 82 BUDGET ESTIMATE

REPORTS CONTROL SYMBOL
DD-COMP (AR) 1082

AIRCRAFT MODIFICATION

DATE 11 DEC 80

APPROPRIATION/BUDGET ACTIVITY

APA/2 (SSN AA0250)

NO.	MODIFICATION TITLE AND NO.	DATE	BY	CHECKED	APPROVED
1	...	...	...	...	...
2	...	...	...	...	...
3	...	...	...	...	...
4	...	...	...	...	...
5	...	...	...	...	...
6	...	...	...	...	...
7	...	...	...	...	...
8	...	...	...	...	...
9	...	...	...	...	...
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12	...	...	...	...	...
13	...	...	...	...	...
14	...	...	...	...	...
15	...	...	...	...	...
16	...	...	...	...	...
17	...	...	...	...	...
18	...	...	...	...	...
19	...	...	...	...	...
20	...	...	...	...	...
21	...	...	...	...	...
22	...	...	...	...	...
23	...	...	...	...	...
24	...	...	...	...	...
25	...	...	...		

CH-47C Fiberglass Rotor Blades, PIP # 1-77-01-0816

AIRCRAFT AFFECTED: CH-47C

DESCRIPTION/JUSTIFICATION: Type of Improvement - Reliability and Maintainability. This PIP allows for equipment of the CH-47C fleet with fiberglass rotor blades, thereby reducing the requirements for procurement of higher price metal blades with their associated high life cycle costs. It will also increase safety, survivability and reduce vulnerability and maintenance man-hours for the CH-47C.

DEVELOPMENT STATUS:

Design Completion Date	Feb 76
Prototype Completion Date	Feb 78
Testing Complete	Mar 79

MILESTONES:

FY 77

FY 78

FY 79FY 80FY 81FY 82FY 83

Engineering Initiated	Sep 77
Flight Qualification Complete	Mar 79

Sep 77

Mar 79

Contract Award for Formal ECP
Formal ECP Approval

Jun 79

Jun 79

Long Lead Time Items Contract Award

Jun 79

APR 80 20 FY 81 10 FY 82

Production Contract Award

	Apr 80	2Q FY 81	1Q FY 82	1Q FY 83
Operating income	\$16.7	\$19.0	\$20.0	\$20.0
Depreciation	1.0	1.0	1.0	1.0
Amortization	.5	.5	.5	.5
Provision for doubtful accounts	.5	.5	.5	.5
Income taxes	1.0	1.0	1.0	1.0
Minority interest	.5	.5	.5	.5
Total non-recurring items	1.0	1.0	1.0	1.0
Adjusted operating income	\$19.7	\$22.0	\$23.0	\$23.0
Operating expenses	\$10.0	\$10.0	\$10.0	\$10.0
Non-recurring items	1.0	1.0	1.0	1.0
Total expenses	\$11.0	\$11.0	\$11.0	\$11.0
Adjusted operating income	\$8.7	\$11.0	\$12.0	\$12.0
Operating income	\$16.7	\$19.0	\$20.0	\$20.0
Depreciation	1.0	1.0	1.0	1.0
Amortization	.5	.5	.5	.5
Provision for doubtful accounts	.5	.5	.5	.5
Income taxes	1.0	1.0	1.0	1.0
Minority interest	.5	.5	.5	.5
Total non-recurring items	1.0	1.0	1.0	1.0
Adjusted operating income	\$19.7	\$22.0	\$23.0	\$23.0
Operating expenses	\$10.0	\$10.0	\$10.0	\$10.0
Non-recurring items	1.0	1.0	1.0	1.0
Total expenses	\$11.0	\$11.0	\$11.0	\$11.0
Adjusted operating income	\$8.7	\$11.0	\$12.0	\$12.0

Delivery Starts

[illegible]

Installation Complete

	3Q FY 82	3Q FY 83	4Q FY 84	2Q FY 85
Operating income	\$10.7	\$16.9	\$16.9	\$16.9
Income tax expense	(1.0)	(1.0)	(1.0)	(1.0)
Minority interest	(.1)	(.1)	(.1)	(.1)
Goodwill impairment charge	(.1)	(.1)	(.1)	(.1)
Other non-recurring items	(.1)	(.1)	(.1)	(.1)
Net income	\$9.4	\$14.6	\$15.6	\$14.6
Diluted earnings per share	\$1.88	\$2.92	\$3.12	\$2.92
Weighted average shares outstanding	5,000,000	5,000,000	5,000,000	5,000,000

PROJECT FINANCIAL PLAN: (Amounts in thousands of dollars)

FY 77		FY 78		FY 79		FY 80		FY 81		FY 82	
Qty	Cost	Qty	Cost	Qty	Cost	Qty	Cost	Qty	Cost	Qty	Cost
4,240.0		857.3		9,740.0		27	21,900.0	77	25,690.0	92	28,262.0

FY 83		Total	
<u>Qty</u>	<u>Cost</u>	<u>Qty</u>	<u>Cost</u>
35	7,825.0		98,514.3

... from
... ..

of 1 May 76, may be used.

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1-121 - 1/15/81

CLASSIFICATION

EXHIBIT P- 3a

CH-47C FIBERGLASS ROTOR BLADES
PIP # 1-77-01-0816

Exhibit P-3A
Page 2 of 3

BASIS FOR COST ESTIMATE: (Amounts in thousands of dollars)

	FY 77		FY 78		FY 79		FY 80		FY 81	
	Qty	Cost	Qty	Cost	Qty	Cost	Qty	Cost	Qty	Cost
Long Lead Time Items						835.0		5,821.5		4,511.8
Shipsets of Blades 1/	8*	814.0					27	8,290.0	77	17,998.8
MWO Kits							(57)	1,087.2	(60)	1,348.6
Nonrecurring										
Tooling						4,172.0		4,039.6		
GSE						232.0		668.6		408.6
Other		3,426.0		857.3		4,501.0		1,993.1		1,422.2
(OMA)										
Recurring										(576.0)
Nonrecurring										(500.0)
Installation									(3)	(41.9)
Transportation										(82.0)
TOTAL		4,240.0		857.3		9,740.0		21,900.0		25,690.0
	FY 82		FY 83		FY 84		FY 85		TOTAL	
	Qty	Cost	Qty	Cost	Qty	Cost	Qty	Cost	Qty	Cost
Long Lead Time Items		3,834.3								15,002.6
Shipsets of Blades	77	19,327.4	35	6,950.0						53,380.2
MWO Kits	(99)	2,547.5								4,983.3
Nonrecurring										
Tooling										8,211.6
GSE		679.0								1,988.2
Other		1,873.8		875.0						14,948.4
(OMA)										
Recurring		(3,530.0)		(4,193.0)		(1,749.0)		(245.0)		(10,293.0)
Nonrecurring		(678.0)								(1,178.0)
Installation	(52)	(793.5)	(90)	(1,479.0)	(58)	(1,020.8)	(13)	(242.9)		(3,578.1)
Transportation		(821.0)		(848.8)		(757.6)				(2,509.4)
TOTAL		28,262.0		7,825.0						98,514.3

1/ Shipset = 6 blades.

*Prototype blades.

1-122 - 1/15/81

FY 82 BUDGET ESTIMATE

CH-47C FIBERGLASS ROTOR BLADES
PIP # 1-77-01-0816

Exhibit P-3A
Page 3 of 3

METHOD OF IMPLEMENTATION: Application will be accomplished at aircraft user locations by depot teams and/or contractor field teams as appropriate. Estimated installation time per kit is 400 hours.

	FY 81				FY 82				FY 83				FY 84				FY 85				
	<u>1</u>	<u>2</u>	<u>3</u>	<u>4</u>	<u>1</u>	<u>2</u>	<u>3</u>	<u>4</u>	<u>1</u>	<u>2</u>	<u>3</u>	<u>4</u>	<u>1</u>	<u>2</u>	<u>3</u>	<u>4</u>	<u>1</u>	<u>2</u>	<u>3</u>	<u>4</u>	<u>Total</u>
Kit Delivery Schedule	2	1	6		16	21	23	15	19	20	18	15	23	28	9						216
Installation Schedule																					
Induction		3				8	13	14	17	22	22	21	25	15	13	15	15	9	4		216
Completion		3				8	13	14	17	22	22	21	25	15	13	15	15	9	4		216

CLASSIFICATION

FY 82 BUDGET REVIEW

REPORTS CONTROL SYMBOL DD-COMP (AR) 1082	AIRCRAFT MODIFICATION	DATE 11 Dec 80																																																																																																																														
APPROPRIATION/BUDGET ACTIVITY APA/2 (SSN AA0250)	MODIFICATION TITLE AND NO. Conv. of T55-L-11D to T55-L-712, PIP # 1-78-01-0700																																																																																																																															
AIRCRAFT AFFECTED: CH-47C																																																																																																																																
DESCRIPTION/JUSTIFICATION: Type of Improvement - Reliability and Maintainability. This PIP provides hardware for a long life (RAM-D) engine. It also provides hardware for emergency power conditions. This hardware will make up an engine identified as the T55-L-712. Improved RAM-D hardware is necessary in order to increase the Mean-Time-Between-Depot for all causes (MTBDA) for the T55-L-11D engine to over 1000 hrs. Emergency power hardware is necessary in order to provide reduced aircraft vulnerability in the event of an engine being disabled. A T55-L-11D engine with RAM-D and emergency power hardware installed will be reidentified as the T55-L-712 engine. DEVELOPMENT STATUS: Program initiated 1 Mar 76. Four (4) test engines have been converted to the T55-L-712 configuration and testing has begun to determine low-cycle fatigue, extended service life and performance. This testing is being accomplished under the Component Improvement Program. MILESTONES: <table border="1"> <thead> <tr> <th></th> <th>FY 76 ACT DATE</th> <th>FY 79 EST DATE</th> <th>FY 80 EST DATE</th> <th>FY 81 EST DATE</th> <th>FY 82 EST DATE</th> <th>FY 83 EST DATE</th> <th>FY 84 EST DATE</th> <th>FY 85 EST DATE</th> </tr> </thead> <tbody> <tr> <td>Contract Award for:</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>Tooling</td> <td>Aug 76</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>Long Lead Time Castings</td> <td></td> <td>Aug 79</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>Engine Production Kits</td> <td>Feb 80</td> <td>3Q 80</td> <td>2Q 81</td> <td>2Q 82</td> <td>2Q 83</td> <td>2Q 84</td> <td>2Q 85</td> <td></td> </tr> <tr> <td>Lead Time - 23 Months</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>Production Rate - See schedule</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>Eng Kit Delivery Starts</td> <td></td> <td>2Q 81</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>Eng Kit Installation Starts</td> <td></td> <td>3Q 81</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>Eng Kit Installation Complete</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>Contract Award for Airframe Kits</td> <td>Sep 79</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>Lead Time 10 Months</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>Production Rate - 25 per Month</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>A/F Kit Delivery Starts</td> <td></td> <td>4Q 80</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> </tbody> </table>				FY 76 ACT DATE	FY 79 EST DATE	FY 80 EST DATE	FY 81 EST DATE	FY 82 EST DATE	FY 83 EST DATE	FY 84 EST DATE	FY 85 EST DATE	Contract Award for:									Tooling	Aug 76								Long Lead Time Castings		Aug 79							Engine Production Kits	Feb 80	3Q 80	2Q 81	2Q 82	2Q 83	2Q 84	2Q 85		Lead Time - 23 Months									Production Rate - See schedule									Eng Kit Delivery Starts		2Q 81							Eng Kit Installation Starts		3Q 81							Eng Kit Installation Complete									Contract Award for Airframe Kits	Sep 79								Lead Time 10 Months									Production Rate - 25 per Month									A/F Kit Delivery Starts		4Q 80						
	FY 76 ACT DATE	FY 79 EST DATE	FY 80 EST DATE	FY 81 EST DATE	FY 82 EST DATE	FY 83 EST DATE	FY 84 EST DATE	FY 85 EST DATE																																																																																																																								
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DRSAY-C Form
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CLASSIFICATION

1-124 - 1/15/81

EXHIBIT P. 43

CH-47 Conversion of T55-L-11D to T55-L-712
PIP # 1-78-01-0700

FY 82 BUDGET REVIEW
 Exhibit P-3a
 Page 2 of 3

FY 76	FY 77	FY 78	FY 79	FY 80	FY 81	FY 82	FY 83	FY 84
<u>ACT DATE</u>	<u>EST DATE</u>	<u>EST DATE</u>	<u>EST DATE</u>	<u>EST DATE</u>	<u>EST DATE</u>	<u>EST DATE</u>	<u>EST DATE</u>	<u>EST DATE</u>

A/F Kit Delivery Starts	4Q 80
A/F Kit Installation Starts	1Q 81

BASIS FOR COST ESTIMATE: (Amounts in thousands of dollars)

	FY 76	FY 79	FY 80	FY 81	FY 82
	QTY COST	QTY COST	QTY COST	QTY COST	QTY COST
Engine Kits		56 9,019.6	24 4,919.5	60 15,119.0	55 15,609.0
Airframe Kits		96 1,022.2	120 1,361.5		
Nonrecur					
APA (tooling)	1,210.0		1,313.7		
(OMA)					
Instl					
APA					
(OMA)				(96) (245.0)	(88) (241.0)
TOTAL	1,210.0	152 10,041.8	144 7,594.7	60 15,119.0	55 15,609.0

	FY 83	FY 84	FY 85	TOTAL	
	QTY COST	QTY COST	QTY COST	QTY COST	
Engine Kits	79 24,075.0	80 26,000.0	11 4,100.0	365 98,842.1	
Airframe Kits				216 2,383.7	
Nonrecur					
APA (tooling)				2,523.7	
(OMA)					
Instl					
APA					
(OMA)	(34) (101.0)			(217) (587.0)	
TOTAL	79 24,075.0	80 26,000.0	11 4,100.0	581 103,749.5	

FY 80 BUDGET REVIEW
Exhibit P-3a
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[illegible]

	FY 80				FY 81				FY 82				FY 83	
	<u>1</u>	<u>2</u>	<u>3</u>	<u>4</u>	<u>1</u>	<u>2</u>	<u>3</u>	<u>4</u>	<u>1</u>	<u>2</u>	<u>3</u>	<u>4</u>		TOTAL
Airframe Kit														
Delivery Schedule				96				120						216
Installation Schedule														
Induction/Completion					24	24	24	24	30	30	30	30		216

CLASSIFICATION

FY 82 BUDGET ESTIMATE

REPORTS CONTROL SYMBOL DD-COMP (AR) 1092		AIRCRAFT MODIFICATION		DATE 12 Jan 81				
APPROPRIATION/BUDGET ACTIVITY APA/2 (SSN AA0250)		MODIFICATION TITLE AND NO. CH-47D Modernization, PIP # 1-80-01-0815						
AIRCRAFT AFFECTED: CH-47D								
DESCRIPTION/JUSTIFICATION: Type of Improvement - Improved Operational Capability. Provides for incorporation of advances in design technology since introduction of CH-47s into Army inventory. Integration of these changes will result in improved reliability, maintainability and reduced vulnerability. Based upon the 20-year life expectancy of the CH-47D modernized aircraft, the year designator of each current serial number will be changed to year of acceptance. The CH-47 (Chinook) medium lift helicopter was developed in the late 50s with the first CH-47s being procured in 1962. The Chinook provided invaluable battlefield mobility in Vietnam for tactical vehicles, artillery and engineer equipment, personnel and logistical support equipment. The Chinook will continue in service to meet the Army medium lift requirement thru the year 2000. The CH-47A and B models fail to meet the Required Operational Capability (ROC) of 15,000 lb. payload for medium lift helicopters.								
DEVELOPMENT STATUS: (RDTE Funded)								
Modernization Development Contract		Jun 76						
1st Flight		May 79						
Preliminary Airworthiness Evaluation (PAE)		Dec 79						
DT/OT II Start		Dec 79						
DT/OT II Complete		May 80						
ASARC III		Aug 80						
DSARC III Decision		Oct 80						
MILESTONES:								
	<u>FY 80</u>	<u>FY 81</u>	<u>FY 82</u>	<u>FY 83</u>	<u>FY 84</u>	<u>FY 85</u>	<u>FY 86</u>	<u>FY 87</u>
Long Lead Time Items	Apr 80	Oct 80	1Q FY 82	1Q FY 83	1Q FY 84	1Q FY 85	1Q FY 86	1Q FY 87
Production Contract Award		Oct 80	1Q FY 82	1Q FY 83	1Q FY 84	1Q FY 85	1Q FY 86	1Q FY 87
Induction Starts		Oct 80	1Q FY 82	1Q FY 83	1Q FY 84	1Q FY 85	1Q FY 86	1Q FY 87
Delivery Complete		3Q FY 83	2Q FY 84	1Q FY 85	1Q FY 86	1Q FY 87	1Q FY 88	1Q FY 89
		<u>FY 88</u>	<u>FY 89</u>	<u>FY 90</u>	<u>FY 91</u>	<u>FY 92</u>	<u>FY 93</u>	
Long Lead Time Items		1Q FY 88	1Q FY 89	1Q FY 90	1Q FY 91	1Q FY 92		
Production Contract Award		1Q FY 88	1Q FY 89	1Q FY 90	1Q FY 91	1Q FY 92	1Q FY 93	

DRSAV-C Form
1 May 76

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CLASSIFICATION

EXHIBIT P. 3a

CH-47D MODERNIZATION
PIP # 1-80-01-0815

FY 82 BUDGET ESTIMATE
Exhibit P-3a
Page 2 of 3

MILESTONES(CONT'D):

	<u>FY 88</u>	<u>FY 89</u>	<u>FY 90</u>	<u>FY 91</u>	<u>FY 92</u>	<u>FY 93</u>
Induction Starts	1Q FY 88	1 FY 89	1Q FY 90	1Q FY 91	1 FY 92	1Q FY 93
Delivery Complete	1Q FY 90	1 FY 91	1Q FY 92	1Q FY 93	1 FY 94	4Q FY 94

BASIS FOR COST ESTIMATE: (Amounts in thousands of dollars)

	<u>FY 80</u>		<u>FY 81</u>		<u>FY 82</u>		<u>FY 83</u>		<u>FY 84</u>		<u>FY 85</u>	
	<u>Qty</u>	<u>Cost</u>	<u>Qty</u>	<u>Cost</u>	<u>Qty</u>	<u>Cost</u>	<u>Qty</u>	<u>Cost</u>	<u>Qty</u>	<u>Cost</u>	<u>Qty</u>	<u>Cost</u>
Long Lead Time Items ^{1/}		5,285.0		8,543.0		10,447.0		39,794.0		45,869.0		48,650.0
Recurring				65,359.0		56,699.0		68,337.0		116,899.0		122,486.0
GFM		7,879.0		26,017.0		18,619.0		44,910.0		52,928.0		63,490.0
Nonrecurring		14,236.0		47,748.0		44,235.0		42,459.0		11,204.0		2,974.0
OMA (Transportation)						(3.6)		(30.9)		(32.2)		(61.3)
TOTAL		27,400.0	9	147,667.0	10	130,000.0	12	195,500.0	26	226,900.0	30	237,600.0
	<u>FY 86</u>		<u>FY 87</u>		<u>FY 88</u>		<u>FY 89</u>		<u>FY 90</u>		<u>FY 91</u>	
	<u>Qty</u>	<u>Cost</u>	<u>Qty</u>	<u>Cost</u>	<u>Qty</u>	<u>Cost</u>	<u>Qty</u>	<u>Cost</u>	<u>Qty</u>	<u>Cost</u>	<u>Qty</u>	<u>Cost</u>
Long Lead Time Items ^{1/}		48,436.0		47,721.0		50,184.0		52,807.0		54,853.0		56,979.0
Recurring		103,335.0		112,616.0		100,389.0		103,952.0		107,529.0		112,759.0
GFM		64,029.0		40,416.0		22,106.0		22,781.0		24,195.0		25,695.0
Nonrecurring				103.0						8,148.0		4,238.0
OMA (Transportation)		(74.4)		(81.4)		(91.6)		(99.9)		(106.0)		(112.5)
TOTAL	31	215,800.0	30	200,856.0	36	172,679.0	36	179,540.0	36	194,725.0	36	199,671.0

^{1/}Does not include GFM Long Lead Time Items.

CH-47D MODERNIZATION
PIP # 1-80-01-0815

FY 82 BUDGET ESTIMATE
Exhibit P-3a
Page 3 of 3

	FY 92		FY 93		FY 94		Total	
	Qty	Cost	Qty	Cost	Qty	Cost	Qty	Cost
Long Lead Time Items ^{1/}		42,719.0						512,287.0
Recurring		117,609.0		82,248.0				1,270,217.0
GFM		23,101.0		6,735.0				442,901.0
Nonrecurring								175,345.0
OMA (Transportation)		(119.4)		(126.2)		(36.9)		(976.3)
TOTAL	36	183,429.0	27	88,983.0			361	2,400,750.0

METHOD OF IMPLEMENTATION: CH-47A, B and C model aircraft will be inducted from the field to the Contractor's site for modernization.

	FY 81				FY 82				FY 83				FY 84				FY 85				FY 86				FY 87				
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	
Inductions	1	2	3	3	2	2	3	3	3	3	3	3	6	6	7	7	7	7	8	8	7	8	8	8	9	9	9	9	
Deliveries					1	1			3	3	3	3	3	3	3	4	4	6	6	7	7	7	7	8	8	7	8	8	
	FY 88				FY 89				FY 90				FY 91				FY 92				FY 93				FY 94				Total
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	
Inductions	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9					361
Deliveries	8	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	361

^{1/}Does not include GFM Long Lead Time Items.

ACTIVITY 2 - AIRCRAFT MODIFICATIONS					EXHIBIT P-3	
Reports Control Symbol DD-COMP(AR) 1092					Date: 11 Dec 80	
APPROPRIATION: APA /2 (SSN AA0270)						
MODEL: C-12A MODIFICATION (1)	FY 1981		FY 1982		FY 1983	
	Quantity (2)	Amount (Thousands) (3)	Quantity (4)	Amount (Thousands) (5)	Quantity (6)	Amount (Thousands) (7)
PT 6A-38 to -41 Engine Conversion	26	578.0	23	550.0	11	281.0
Auto Feather/Auto Sync	26	303.0	23	288.0	11	147.0
Head Set Adapter	80	31.0				
	TOTAL	912.0	TOTAL	838.0	TOTAL	428.0

CLASSIFICATION

REPORTS CONTROL SYMBOL
DD-COMP (AR) 1092

AIRCRAFT MODIFICATION

DATE 11 DEC 80

APPROPRIATION/BUDGET ACTIVITY
APA/2 (SSN AA0270)MODIFICATION TITLE AND NO.
PT 6A-38 to -41 Engine Conversion PIP #1-79-01-0602

AIRCRAFT AFFECTED: C-12A

DESCRIPTION/ JUSTIFICATION: Type of Improvement - Reduced cost of operation. The PT 6A-38 engines will be converted to the PT 6A-41 configuration at the time of overhaul to take advantage of the increased TBO (time between overhaul) and hot-end inspection intervals of the PT 6A-41 engine.

DEVELOPMENTAL STATUS: The PT 6A-41 engine has already been fully developed and is being installed in the FY 78 production aircraft as well as all commercial Beech A-200 aircraft. The engineering change proposal (ECP), which will provide specific detail's and plans for engine conversion at the time of overhaul, is being prepared.

<u>MILESTONES:</u>	<u>FY 79</u>	<u>FY 81</u>
Contract Award for ECP	4Q 80	
ECP Approval	1Q 81	
Contract Award		2Q 81
Leadtime	15 Mo	
Installation Starts		1Q 83
Installation Completed		4Q 85

PROJECT FINANCIAL PLAN (Amounts in thousands of dollars)

FY	81	FY	82	FY	83	FY	84	TOTAL PROGRAM	
QTY	COST	QTY	COST	QTY	COST	QTY	COST	QTY	COST
26	578.0	23	550.0	11	281.0			60	1409.0

BASIS FOR COST ESTIMATE: (Amounts in thousands of dollars)

	FY	79	FY	81	FY	82	FY	83	FY	84	FY	85	TOTAL PROGRAM	
	QTY	COST	QTY	COST	QTY	COST	QTY	COST	QTY	COST	QTY	COST	QTY	COST
Hardware			25	578.0	23	550.0	11	281.0					60	1409.0
Engineering (OMA)		(48.0)												
Publication (OMA)		(16.0)												
Installation (OMA)							(20)	(71.0)	(20)	(76.0)	(20)	(81.0)	(60)	(228.0)
TOTAL			26	578.0	23	550.0	11	281.0					60	1409.0

DRSTS-C Form
1 Apr 78

2075

Edition of 1 May 76, may be used.

P-1 SHOPP LIST PAGE NO.

CLASSIFICATION

1-131 - 1/15/81

EXHIBIT P- 3a

KIT DELIVERY SCHEDULE:

FY 82				FY 83				FY 84			
<u>1</u>	<u>2</u>	<u>3</u>	<u>4</u>	<u>1</u>	<u>2</u>	<u>3</u>	<u>4</u>	<u>1</u>	<u>2</u>	<u>3</u>	<u>4</u>
5	5	5	10	10	10	5	5	5	5	5	5

INSTALLATION SCHEDULE:

FY 83				FY 84				FY 85			
<u>1</u>	<u>2</u>	<u>3</u>	<u>4</u>	<u>1</u>	<u>2</u>	<u>3</u>	<u>4</u>	<u>1</u>	<u>2</u>	<u>3</u>	<u>4</u>
5	5	5	5	5	5	5	5	5	5	5	5

METHOD OF IMPLEMENTATION: Installation will be at a time of overhaul.
 Beech will make installation of the PT 6A-41 engine concurrent with
 the Autofeather/synch.

CLASSIFICATION		REPORTS CONTROL SYMBOL DD-COMP (AR) 1092		AIRCRAFT MODIFICATION		DATE 11 DEC 80																						
APPROPRIATION/BUDGET ACTIVITY APA/2 (SSN AA0270)				MODIFICATION TITLE AND NO. AUTO FEATHER/AUTO SYNCH PIP # 1-79-01-0603																								
AIRCRAFT AFFECTED: C-12A																												
DESCRIPTION/JUSTIFICATION: Type of Improvement - Improved safety by standardization of fixed wing aircraft. This change will provide automatic propeller feathering in the event that an engine failure occurs. It will also provide for automatic synchronization of the propellers during operation.																												
DEVELOPMENTAL STATUS: Automatic propeller feather and synchronization is fully developed and being incorporated on the FY 78 aircraft during production. The engineering change proposal (ECP), setting forth kit and application criteria, is being prepared.																												
MILESTONES: <table style="width: 100%; border: none;"> <tr> <td></td> <td style="text-align: center;"><u>FY 79</u></td> <td style="text-align: center;"><u>FY 81</u></td> </tr> <tr> <td>Contract Award for ECP</td> <td style="text-align: center;">4Q 80</td> <td></td> </tr> <tr> <td>ECP Approval</td> <td style="text-align: center;">1Q 81</td> <td></td> </tr> <tr> <td>Contract Award</td> <td></td> <td style="text-align: center;">3Q 81</td> </tr> <tr> <td>Leadtime</td> <td style="text-align: center;">15 Mo</td> <td></td> </tr> <tr> <td>Installation Starts</td> <td></td> <td style="text-align: center;">1Q 83</td> </tr> <tr> <td>Installation Completed</td> <td></td> <td style="text-align: center;">4Q 85</td> </tr> </table>									<u>FY 79</u>	<u>FY 81</u>	Contract Award for ECP	4Q 80		ECP Approval	1Q 81		Contract Award		3Q 81	Leadtime	15 Mo		Installation Starts		1Q 83	Installation Completed		4Q 85
	<u>FY 79</u>	<u>FY 81</u>																										
Contract Award for ECP	4Q 80																											
ECP Approval	1Q 81																											
Contract Award		3Q 81																										
Leadtime	15 Mo																											
Installation Starts		1Q 83																										
Installation Completed		4Q 85																										
PROJECT FINANCIAL PLAN (Amounts in thousands of dollars)																												
	<u>FY 81</u>	<u>FY 82</u>	<u>FY 83</u>	<u>FY 84</u>	<u>TOTAL PROGRAM</u>																							
	QTY COST	QTY COST	QTY COST	QTY COST	QTY	COST																						
	26 303.0	23 288.0	11 147.0		60	738.0																						
BASIS FOR COST ESTIMATE: (Amounts in thousands of dollars)																												
	<u>FY 79</u>	<u>FY 81</u>	<u>FY 82</u>	<u>FY 83</u>	<u>FY 84</u>	<u>FY 85</u>	<u>TOTAL PROGRAM</u>																					
	QTY COST	QTY COST	QTY COST	QTY COST	QTY COST	QTY COST	QTY COST																					
Hardware		26 303.0	23 288.0	11 147.0			60 738.0																					
Publications (OMA)		(19.0)																										
Engineering (OMA)		(18.0)																										
Application (OMA)				(20) (601.0)	(20) (642.0)	(20) (682.0)	(60) (1925.0)																					
TOTAL		26 303.0	23 288.0	11 147.0			60 738.0																					

Autofeather/Autosynch

Page 2 of 2

KIT DELIVERY SCHEDULE:

FY 82			
<u>1</u>	<u>2</u>	<u>3</u>	<u>4</u>
5	10		

FY 83			
<u>1</u>	<u>2</u>	<u>3</u>	<u>4</u>
10	10	5	5

FY 84			
<u>1</u>	<u>2</u>	<u>3</u>	<u>4</u>
5	5	5	

INSTALLATION SCHEDULE:

FY 83			
<u>1</u>	<u>2</u>	<u>3</u>	<u>4</u>
5	5	5	5

FY 84			
<u>1</u>	<u>2</u>	<u>3</u>	<u>4</u>
5	5	5	5

FY 85			
<u>1</u>	<u>2</u>	<u>3</u>	<u>4</u>
5	5	5	5

METHOD OF IMPLEMENTATION: Installation will be at a time of overhaul.

Beech will make installation of the Autofeather/synch concurrent with the PT 6A-41 Engine conversion.

ACTIVITY 2 - AIRCRAFT MODIFICATIONS					EXHIBIT P-3	
Reports Control Symbol DD-COMP(AR) 1092					Date: 11 Dec 80	
APPROPRIATION: APA/2 (SSN: AZ1200)						
MODEL: EH-1 QUICK FIX MODIFICATION (1)	FY 19 81		FY 1982		FY 19 83	
	Quantity (2)	Amount (Thousands) (3)	Quantity (4)	Amount (Thousands) (5)	Quantity (6)	Amount (Thousands) (7)
** QUICK FIX	5	4369.0				
* XM-130 GENERAL PURPOSE DISPENSER (page 1-72)	19	81.0				
** HOT METAL AND PLUME SUPPRESSOR	30	764.0				
* AN/ALQ-156() MISSILE DETECTOR SYSTEM (page 1-136)			30	2400.0		
<u>TOTAL</u>		5,214.0		2400.0		
* Consolidated P-3a						
** P3A not included. No FY82/83 Programs						

CLASSIFICATION

FY 82 Budget Estimate

REPORTS CONTROL SYMBOL DD-COMP (AR) 1092		AIRCRAFT MODIFICATION		DATE 11 Dec, 80																								
APPROPRIATION/BUDGET ACTIVITY APA/2			MODIFICATION TITLE AND NO. AN/ALQ-156() Missile Detector System																									
PIP NC's: 1-77-01-0877 (CH-47C), 1-80-01-1777 (EH-1H/X)																												
<u>AIRCRAFT AFFECTED:</u> CH-47C (SSN: AA0250) EH-1H/X (SSN: AZ1200)																												
<u>DESCRIPTION/JUSTIFICATION:</u> Type of Improvement - Operational Capability. The AN/ALQ-156 Missile Detector System is a countermeasure device which detects the approach of hostile air-defense missile systems.																												
<u>DEVELOPMENT STATUS:</u> Initiate Airframe Integration Engineering, 4Q FY 80 ECP Approval 4Q FY 81.																												
<u>MILESTONES:</u> <table border="0"> <thead> <tr> <th></th> <th><u>FY 81</u></th> <th><u>FY 82</u></th> </tr> </thead> <tbody> <tr> <td>Airframe Mod Kit Cont Awd</td> <td></td> <td>1Q 82</td> </tr> <tr> <td>Prod Lead Time</td> <td></td> <td>12 months</td> </tr> <tr> <td>Airframe Mod Kit Deliveries Start</td> <td></td> <td>1Q 83</td> </tr> <tr> <td>Airframe Mod Kit Installation Starts</td> <td></td> <td>2Q 83</td> </tr> <tr> <td>AN/ALQ-156() Sys Cont Awd</td> <td>2Q FY 81</td> <td>2Q 82</td> </tr> <tr> <td>Prod Lead Time</td> <td>15 months</td> <td>19 months</td> </tr> <tr> <td>AN/ALQ-156() Sys Deliveries Start</td> <td>3Q FY 82</td> <td>1Q 84</td> </tr> </tbody> </table>						<u>FY 81</u>	<u>FY 82</u>	Airframe Mod Kit Cont Awd		1Q 82	Prod Lead Time		12 months	Airframe Mod Kit Deliveries Start		1Q 83	Airframe Mod Kit Installation Starts		2Q 83	AN/ALQ-156() Sys Cont Awd	2Q FY 81	2Q 82	Prod Lead Time	15 months	19 months	AN/ALQ-156() Sys Deliveries Start	3Q FY 82	1Q 84
	<u>FY 81</u>	<u>FY 82</u>																										
Airframe Mod Kit Cont Awd		1Q 82																										
Prod Lead Time		12 months																										
Airframe Mod Kit Deliveries Start		1Q 83																										
Airframe Mod Kit Installation Starts		2Q 83																										
AN/ALQ-156() Sys Cont Awd	2Q FY 81	2Q 82																										
Prod Lead Time	15 months	19 months																										
AN/ALQ-156() Sys Deliveries Start	3Q FY 82	1Q 84																										
<u>PROJECT FINANCIAL PLAN:</u> (Amounts in thousands of dollars) <table border="0"> <thead> <tr> <th><u>FY 80</u></th> <th><u>FY 81</u></th> <th><u>FY 82</u></th> <th><u>TOTAL PROGRAM</u></th> </tr> </thead> <tbody> <tr> <td>900.0</td> <td>8,721.0</td> <td>11,029.0</td> <td>20,650.0</td> </tr> </tbody> </table>					<u>FY 80</u>	<u>FY 81</u>	<u>FY 82</u>	<u>TOTAL PROGRAM</u>	900.0	8,721.0	11,029.0	20,650.0																
<u>FY 80</u>	<u>FY 81</u>	<u>FY 82</u>	<u>TOTAL PROGRAM</u>																									
900.0	8,721.0	11,029.0	20,650.0																									

AN/ALQ-156 Missile Detector System
(Consolidated P-3a)

FY 82 Budget Estimate
Exhibit P-3a
Page 2

BASIS FOR COST ESTIMATE: (Amounts in thousands of dollars)

	<u>FY 80</u>		<u>FY 81</u>		<u>FY 82</u>		<u>FY 83</u>		<u>TOTAL PROGRAM</u>	
<u>CH-47C</u>	<u>QTY</u>	<u>COST</u>	<u>QTY</u>	<u>COST</u>	<u>QTY</u>	<u>COST</u>	<u>QTY</u>	<u>COST</u>	<u>QTY</u>	<u>COST</u>
Non-Recurring		900		3,782.0		712.0				5,394.0
Airframe Mod Kits					214	2,368.0			214	2,368.0
AN/ALQ-156 Systems			43	3,921.0	65	4,876.0			108	8,797.0
Spec Test Equip				718.0		512.0				1,230.0
ERADCOM Eng Spt				300.0		161.0				461.0
Installations (OMA)							(214)	(776.0)	(214)	(776.0)
TOTAL		<u>900</u>		<u>8,721.0</u>		<u>8,629.0</u>				<u>18,250.0</u>

	<u>FY 82</u>		<u>FY 83</u>		<u>TOTAL PROGRAM</u>	
<u>EH-1H/X</u>	<u>QTY</u>	<u>COST</u>	<u>QTY</u>	<u>COST</u>	<u>QTY</u>	<u>COST</u>
Non-Recurring		214.0				214.0
Airframe Mod Kits	28	96.0			28	96.0
AN/ALQ-156 Systems	30	1,965.0			30	1,965.0
Spec Test Equip		63.0				63.0
ERADCOM Eng Spt		62.0				62.0
Installations (OMA)			(28)	(84.0)	(28)	(84.0)
TOTAL		<u>2,400.0</u>				<u>2,400.0</u>

**AN/ALQ-156 Missile Detector System
(Consolidated P-3a)**

**FY 82 Budget Estimate
Page 3**

BASIS FOR COST ESTIMATE: (Amounts in thousands of dollars)

	<u>FY 80</u>		<u>FY 81</u>		<u>FY 82</u>		<u>FY 83</u>		<u>TOTAL PROGRAM</u>	
<u>RECAP OF ALL SYSTEMS:</u>	<u>QTY</u>	<u>COST</u>	<u>QTY</u>	<u>COST</u>	<u>QTY</u>	<u>COST</u>	<u>QTY</u>	<u>COST</u>	<u>QTY</u>	<u>COST</u>
Non-Recurring		900.0		3,782.0		926.0				5,608.0
Airframe Mod Kits					242	2,464.0			242	2,464.0
AN/ALQ-156 Sys			43	3,921.0	95	6,841.0			138	10,762.0
Spec Test Equip				718.0		575.0				1,293.0
ERADCOM Eng Spt				300.0		223.0				523.0
Installation (OMA)							(242)	(860.0)	(242)	(860.0)
TOTAL		<u>900.0</u>		<u>8,721.0</u>		<u>11,029.0</u>				<u>20,650.0</u>

KIT DELIVERY SCHEDULE:

	<u>FY 83</u>				<u>TOTAL PROGRAM</u>
	<u>1</u>	<u>2</u>	<u>3</u>	<u>4</u>	
CH-47C	100	114			214
EH-1H/X		28			28
	<u>100</u>	<u>142</u>			<u>242</u>

KIT INSTALLATION SCHEDULE:

	<u>FY 83</u>				<u>TOTAL PROGRAM</u>
	<u>1</u>	<u>2</u>	<u>3</u>	<u>4</u>	
CH-47C		56	82	76	214
EH-1H/X			9	19	28
		<u>56</u>	<u>91</u>	<u>95</u>	<u>242</u>

METHOD OF IMPLEMENTATION: Airframe mod kits will be applied in the field by contract or depot contract teams. Effort will be expended to identify the most economical method of implementation such as centralized application sites and the application of multiple modifications in the same time frame when practicable.

FY 82 Budget Estimate

ACTIVITY 2 - AIRCRAFT MODIFICATIONS					EXHIBIT P-3	
Reports Control Symbol DD-COMP(AR) 1092					Date: 11 DEC 80	
APPROPRIATION: APA/2 (SSN AA0400)						
MODEL: OH-58 A & C MODIFICATION (1)	FY 1981		FY 1982		FY 1983	
	Quantity (2)	Amount (Thousands) (3)	Quantity (4)	Amount (Thousands) (5)	Quantity (6)	Amount (Thousands) (7)
*NOE Communications: (page 1 -140)						
Impvd VHF-FM	215	2,926.0			130	1,800.0
UHF - Side Band	35	1,474.0	108	1,600.0	138	8,800.0
TOTAL		4,400.0		1,600.0		10,600.0
*Consolidated P-3A						

CLASSIFICATION

FY 82 BUDGET ESTIMATE

REPORTS CONTROL SYMBOL DD-COMP (AR) 1082		AIRCRAFT MODIFICATION		DATE 11 DEC 80																																																													
APPROPRIATION/BUDGET ACTIVITY APA/2			MODIFICATION TITLE AND NO. NOE Communications																																																														
AIRCRAFT AFFECTED: AH-1S, OH-58A/C DESCRIPTION/JUSTIFICATION: There is an urgent need for Army Aircraft to have reliable secured radio communications from 0 to 50 Km range while operating in the Nap-of-the-Earth (NOE) altitudes down to and including ground level. In a hostile Electronic Warfare environment successful mission accomplishment and aircraft survivability are enhanced when Line-of-Sight, and Non-Line-of-Sight Air-to-Air and Air-to-Ground communications are provided. To improve reliability, a combination of improved VHF-FM and HF-SSB Radio that will provide Nearly Vertical Incident Skywave (NVIS) radio coverage where terrain masking obstructs Line-of-Sight coverage was required. Requirements were established by SAG committee and further emphasized by DA and TRADOC. TRADOC ROC 2/cards Reference No. 0584, was approved by DA on 31 Oct 79. 1/System Advisory Group 2/Required Operational Capability PROCUREMENT STATUS: The nondevelopmental item procurement process is being used. The IFM³ and HF⁴ contracts are structural for a one year basic contract to procure units for First Article/Initial Production Test with four one year options for production hardware. Award of basic contract is projected for 2QFY81. This procurement has been identified as a Small Business set - aside 8A1B under Public Law 95507 and as such the procurement package must be reworked for contract award to Small Business Administration (SBA). 3/Improved frequency modulation 4/high frequency The following milestones for procurement of GFE are provided: <table border="0" style="width: 100%;"> <thead> <tr> <th></th> <th><u>FY 79</u></th> <th><u>FY 80</u></th> <th><u>FY 81</u></th> <th><u>FY 82</u></th> <th><u>FY 83</u></th> </tr> </thead> <tbody> <tr> <td>DA approved ROC</td> <td></td> <td>31 Oct 79</td> <td></td> <td></td> <td></td> </tr> <tr> <td>Final Proc Data Package - Competitive</td> <td></td> <td>11 Apr 80</td> <td></td> <td></td> <td></td> </tr> <tr> <td>Proc Data Package - SBA</td> <td></td> <td></td> <td>Dec 80</td> <td></td> <td></td> </tr> <tr> <td>Contract Award - SBA</td> <td></td> <td></td> <td>Jun 81</td> <td></td> <td></td> </tr> <tr> <td>SBA Award to SB</td> <td></td> <td></td> <td>Jun 81</td> <td></td> <td></td> </tr> <tr> <td>Production Delivery Start - IFM and HF (Production Rate 100/Month estimated)</td> <td></td> <td></td> <td></td> <td></td> <td>4Q</td> </tr> <tr> <td>Production Options</td> <td></td> <td></td> <td></td> <td>3Q</td> <td>3Q</td> </tr> </tbody> </table> <table border="0" style="width: 100%; margin-top: 10px;"> <thead> <tr> <th><u>PIP NO</u></th> <th><u>IFM</u></th> <th><u>HF</u></th> <th><u>SSN</u></th> </tr> </thead> <tbody> <tr> <td>AH-1S</td> <td>1-80-01-0985-B-1</td> <td>Not Rqd</td> <td>AA0150</td> </tr> <tr> <td>OH-58A/C</td> <td>1-80-01-0285-A</td> <td>1-82-01-0219</td> <td>AA0400</td> </tr> </tbody> </table>							<u>FY 79</u>	<u>FY 80</u>	<u>FY 81</u>	<u>FY 82</u>	<u>FY 83</u>	DA approved ROC		31 Oct 79				Final Proc Data Package - Competitive		11 Apr 80				Proc Data Package - SBA			Dec 80			Contract Award - SBA			Jun 81			SBA Award to SB			Jun 81			Production Delivery Start - IFM and HF (Production Rate 100/Month estimated)					4Q	Production Options				3Q	3Q	<u>PIP NO</u>	<u>IFM</u>	<u>HF</u>	<u>SSN</u>	AH-1S	1-80-01-0985-B-1	Not Rqd	AA0150	OH-58A/C	1-80-01-0285-A	1-82-01-0219	AA0400
	<u>FY 79</u>	<u>FY 80</u>	<u>FY 81</u>	<u>FY 82</u>	<u>FY 83</u>																																																												
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DRST-C Form
1 Apr 76

2075

Edition of 1 May 76, may be used

D-1 RNDPP LIST

PAGE NO.

CLASSIFICATION

1-140 - 1/15/81

FY81/82 2-

FY 82 BUDGET ESTIMATE

CLASSIFICATION		REPORTS CONTROL SYMBOL DD-COMP (AR) 1002		AIRCRAFT MODIFICATION		DATE 11 DEC 80			
APPROPRIATION/BUDGET ACTIVITY APA/2				MODIFICATION TITLE AND NO. NOE Communications					
MILESTONE FOR AIRFRAME:				AH-1S/OH-58C		OH-58A			
Initiate Engineering				4Q 82		4Q 82			
Production Decision				2Q 84		2Q 84			
First Production Hwd Del				4Q 84		4Q 84			
First Kit Applied				1Q 85		1Q 85			
Last Kit Applied				3Q 87		3Q 86			
PROJECT FINANCIAL PLAN: (Amounts in thousands of dollars)									
FY 80	FY 81	FY 82	FY 83	FY 84	FY 85	FY 86	TOTAL PROGRAM		
COST	COST	COST	COST	COST	COST	COST	COST		
6,398.0	4,760.0	3,309.0	16,225.0	15661.0	15,570.0	4,660.0	66,583.0		
BASIS FOR COST ESTIMATES: (Amounts in thousands of dollars)									
Recap of		FY 80		FY 81		FY 82		FY 83	
2 systems	QTY	AMT	QTY	AMT	QTY	AMT	QTY	AMT	
GFE-IFM	25	451.0	215	2070.0	173	1588.0	611	6218.0	
GFE-HF	25	875.0	35	1474.0	0	0	138	6894.0	
STE-IFM	10	56.0	15	37.0	9	60.0	2	14.0	
STE-HF					9	236.0	7	194.0	
GND PDO	2	86.0			0	0	15	903.0	
KITS IFM					474	616.0	585	1126.0	
HF					280	809.0	304	876.0	
NONRECUR APA		4930.0		1179.0					
(OMA)		(104.0)		(1767.0)		(233.0)		(166.0)	
INSTL (OMA) IFM							616	(1362.0)	
HF							213	(945.0)	
TOTAL (OMA)		(104.0)		(1767.0)		(233.0)		(2473.0)	
TOTAL APA		6398.0		4760.0		3309.0		16225.0	

DRSTS-C Form
1 Apr 78

2075

Edition of 1 May 76, may be used.

P-1 SHOPP LIST

PAGE NO.

CLASSIFICATION

1-141 - 1/15/81

EXHIBIT P- 3a

CLASSIFICATION

FY 82 BUDGET ESTIMATE

REPORTS CONTROL SYMBOL DD-COMP (AR) 1002		AIRCRAFT MODIFICATION				DATE 11 DEC 80			
APPROPRIATION/BUDGET ACTIVITY APA/2				MODIFICATION TITLE AND NO. NOE Communications					
BASIS FOR COST ESTIMATES: (continued)									
Recap-cont.		FY 84		FY 85		FY 86		TOTAL	
	QTY	AMT	QTY	AMT	QTY	AMT	QTY	AMT	
GFE-IFM	480	5085.0	303	3790.0	267	4107.0	2072	23309.0	
GFE-HF	138	7085.0	154	7879.0			490	24207.0	
STE-IFM							27	167.0	
STE-HF	7	204.0	7	219.0			30	853.0	
GND RDO	15	947.0	23	1457.0			55	3393.0	
KITS IFM	783	1470.0	200	524.0	363	553.0	2405	4289.0	
HF	288	870.0	531	1701.0	0	0	1403	4256.0	
NONRECUR APA								6109.0	
(OMA)		(149.0)		(85.0)				(2504.0)	
INSTL (OMA) IFM628		(1373.0)	1161	(2651.0)			2405	(5386.0)	
HF 325		(1548.0)	865	(4455.0)			1403	(6948.0)	
TOTAL (OMA)		(3070.0)		(7191.0)				(14838.0)	
TOTAL APA		15661.0		15570.0		4660.0		66583.0	
METHOD OF IMPLEMENTATION: Application of kits will be by depots, modification lines and field units with TSARCOM formal application plan.									
TOTAL NOE COMM FUNDING BY ACFT SYSTEM:									
	FY 80	FY 81	FY 82	FY 83	FY 84	FY 85	FY 86	TOTAL	
AH-1S	281.0	360.0	1709.0	5625.0	5994.0	524.0	0	14,493.0	
OH-58	6117.0	4400.0	1600.0	10600.0	9667.0	15046.0	4660.0	52,090.0	
TOTAL	6398.0	4760.0	3309.0	16225.0	15661.0	15570.0	4660.0	66,583.0	

DRSTS-C Form
1 Apr 78

2075

Edition of 1 May 76, may be used.

P-1 SHOPP LIST PAGE NO.

1-142 - 1/15/81

CLASSIFICATION

EXHIBIT P- 3a

BASIS FOR COST ESTIMATES: (Amounts in thousands of dollars)

NOE Communications
Consolidated P-3A

	<u>FY 80</u>		<u>FY 81</u>		<u>FY 82</u>		<u>FY 83</u>	
<u>OH-58 A/C:</u>								
GFE-IFM-OH-58A	5	90.0	54	520.0		0		0
GFE-IFM-OH-58C	20	361.0	161	1550.0		0	130	1456.0
STE-IFM-OH-58 A/C	10	56.0	6	37.0	7	47.0		0
KITS-IFM-OH-58A		0		0	56	68.0		0
KITS-IFM-OH-58C		0		0	368	440.0	217	277.0
GFE-HF-OH-58A	5	175.0		0		0	50	2413.0
GFE-HF-OH-58C	20	700.0	35	1474.0		0	88	4481.0
GROUND RADIO-OH-58 A/C	2	86.0		0		0	15	903.0
STE-HF-OH-58 A/C		0		0	9	236.0	7	194.0
KITS-HF-OH-58A		0		0	100	316.0	109	316.0
KITS-HF-OH-58C		0		0	180	493.0	195	560.0
GFE-HF-NON-RECUR-OH-58 A/C		3839.0		0		0		0
(OMA) IFM AIRFRAME NON-RECUR-OH-58A		(14.0)		(227.0)		(20.0)		(13.0)
IFM AIRFRAME NON-RECUR-OH-58C		(15.0)		(227.0)		(19.0)		(12.0)
IFM GFE NON-RECUR-OH-58A-APA		405.0		409.0		0		0
IFM GFE NON-RECUR-OH-58C-APA		405.0		410.0		0		0
IFM-INSTALLATION-OH-58A		0		0		0	(56)	(150.0)
IFM-INSTALLATION-OH-58C		0		0		0	(368)	(984.0)
HF-AIRFRAME-OH-58 A/C		0		(647.0)		(78.0)		(66.0)
HF-INSTALLATION-OH-58A		0		0		0	(76)	(334.0)
HF-INSTALLATION-OH-58C		0		0		0	(137)	(611.0)
<u>TOTAL APA-OH-58 A/C</u>		<u>6117.0</u>		<u>4400.0</u>		<u>1600.0</u>		<u>10600.0</u>
<u>AH-1S:</u>								
GFE-IFM		0		0	173	1588.0	481	4762.0
STE-IFM		0		0	2	13.0	2	14.0
KITS-IFM		0		0	50	108.0	368	849.0
(OMA) - IFM-AIRFRAME-NON-RECUR		(25.0)		(666.0)		(116.0)		(75.0)
IFM-GFE-NON-RECUR-APA		281.0		360.0		0		0
IFM-INSTALLATION		0		0		0	(192)	(228.0)
<u>TOTAL APA-AH-1S</u>		<u>281.0</u>		<u>360.0</u>		<u>1709.0</u>		<u>5625.0</u>

BASIS FOR COST ESTIMATES: (Amounts in thousands of dollars)(Cont)

NOE Communications
Consolidated P-3A

	FY 84		FY 85		FY 86		TOTAL	
OH-58 A/C: (Con't)								
GFE-IFM-OH-58A		0	46	1222.0	114	1507.0	269	3339.0
GFE-IFM-OH-58C		0	17	2568.0	153	2600.0	669	8535.0
STE-IFM-OH-58 A/C		0		0		0	23	140.0
KITS-IFM-OH-58A	415	561.0		0	363	553.0	834	1182.0
FITS-IFM-OH-58C		0		0		0	585	717.0
GFE-HF-OH-58A	50	2551.0	67	3518.0		0	172	8657.0
GFE-HF-OH-58C	88	4534.0	87	4361.0		0	318	15550.0
GROUND RADIO-OH-58 A/C	15	947.0	23	1457.0		0	55	3393.0
STE-HF-OH-58 A/C	7	204.0	7	219.0		0	30	853.0
KITS-HF-OH-58A	78	235.0	531	1701.0		0	818	2568.0
KITS-HF-OH-58C	210	635.0		0		0	585	1688.0
GFE-HF-NON-RECUR-OH-58 A/C		0		0		0		3839.0
(OMA)IFM AIRFRAME NON-RECUR-OH-58A		0		0		0		(274.0)
IFM AIRFRAME NON-RECUR-OH-58C		0		0		0		(273.0)
IFM GFE NON-RECUR-OH-58A -APA		0		0		0		814.0
IFM GFE NON-RECUR-OH-58C -APA		0		0		0		815.0
IFM-INSTALLATION-OH-58A	(146)	(417.0)	(632)	(1916.0)		0	(834)	(2483.0)
IFM-INSTALLATION-OH-58C	(217)	(619.0)		0		0	(585)	(1603.0)
HF-AIRFRAME-OH-58 A/C		(69.0)		0		0		(860.0)
HF-INSTALLATION-OH-58A	(116)	(552.0)	(626)	(3243.0)		0	(818)	(4129.0)
HF-INSTALLATION-OH-58C	(209)	(996.0)	(239)	(1212.0)		0	(585)	(2819.0)
TOTAL APA-OH-58 A/C		9667.0		15046.0		4660.0		52,090.0
AH-1S: (Con't)								
GFE-IFM	480	5085.0		0		0	1134	11435.0
STE-IFM		0		0		0	4	27.0
KITS-IFM	368	909.0	200	524.0		0	986	2390.0
(OMA)-IFM-AIRFRAME-NON-RECUR		(80.0)		(85.0)		0		(1097.0)
IFM-GFE-NON-RECUR-APA		0		0		0		641.0
IFM-INSTALLATION	(265)	(337.0)	(529)	(735.0)		0	(986)	(1300.0)
TOTAL APA-AH-1S		5994.0		524.0		0		14,493.0

ACTIVITY 2 - AIRCRAFT MODIFICATIONS					EXHIBIT P-3	
Reports Control Symbol DD-COMPT(AR) 1092						
APPROPRIATION: APA/2 FY 82 OSD Budget					Date: 11 Dec 80	
MODEL: Airborne Avionics SSN AA0700 MODIFICATION (1)	FY 1981		FY 1982		FY 1983	
	Quantity (2)	Amount (Thousands) (3)	Quantity (4)	Amount (Thousands) (5)	Quantity (6)	Amount (Thousands) (7)
AN/APN-209(V) Radar Altimeter SST		2,087.0		3,592.0		42.0
Improved MK-1564()/AR Head Set		0		55.0		60.0
MK-994 Test Cables		0		178.0		0
RT-1354/ARC 186 Radio		0		0		1,220.0
* AN/ARC-114 (PIP 0100) Radio		754.0		0		0
* AN/ARC-114 (PIP 0106) Radio		423.0		0		0
* AN/ARN-89 Directional Finder		1,031.0		0		0
* RT-1167/ARC-164(V) Radio		940.0		0		0
Improved Reliability of LDNS AN/ASN-137		768.0		475.0		865.0
AN/FPN-40 Solid State Radar		0		0		2,913.0
TOTAL		6,003.0		4,300.0		5,100.0
*P-3a not included. No FY82/83 Funds.						

CLASSIFICATION

REPORTS CONTROL SYMBOL DD-COMP (AR) 1092	EQUIPMENT	MODIFICATION	DATE 11 Dec 80															
APPROPRIATION/BUDGET ACTIVITY APA/FY 82		MODIFICATION TITLE AND NO. AN/APN-209(V) Radar Altimeter PIP NO. 1-80-07-0701																
<u>Equipment Models Affected:</u> N/A <u>Description/Justification:</u> A solid state transmitter with automatic power management circuits will be incorporated into the AN/APN-209 to eliminate interference on the AN/APR-39 Radar Warning Receiver. Side benefits include reduced detectability of the radar altimeter in an electronic warfare environment, and also increased reliability. This PIP is in response to request from OH 58 and UH-60 Project Manager to eliminate system incompatibility. The PIP will work with both the AN/APR-39(V1) and (V2) configuration. The power managed AN/APN-209 peak power output during low level flight will be reduced thereby virtually eliminating any aircraft detectability due to altimeter emissions. <u>Development Status:</u> Flight tests of prototypes on the UH-1H, EH-1H, and OH-58C have been completed. <u>Milestones:</u> <table> <tr> <td>Initiate Engrg</td> <td>4Q</td> <td>80</td> </tr> <tr> <td>IPR/PROD Decision</td> <td>4Q</td> <td>80</td> </tr> <tr> <td>First Prod Hdw Del</td> <td>4Q</td> <td>81</td> </tr> <tr> <td>First Kit Applied</td> <td>4Q</td> <td>81</td> </tr> <tr> <td>Last Kit Applied</td> <td>3Q</td> <td>84</td> </tr> </table>				Initiate Engrg	4Q	80	IPR/PROD Decision	4Q	80	First Prod Hdw Del	4Q	81	First Kit Applied	4Q	81	Last Kit Applied	3Q	84
Initiate Engrg	4Q	80																
IPR/PROD Decision	4Q	80																
First Prod Hdw Del	4Q	81																
First Kit Applied	4Q	81																
Last Kit Applied	3Q	84																

CLASSIFICATION

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1-146 - 1/15/81

EXHIBIT P. 43

MODIFICATION TITLE AND NO: AN/APH/209 (V) Solid State Transmitter PIP NO. 1-80-Q7-Q701

PROJECT FINANCIAL PLAN: (Amount in millions of dollars)

FY-79 & Prior		FY-80 Current		FY-81 Budget		FY-82 Budget - 1		FY-83		FY-84		FY-85		FY-86		TOTAL PROGRAM	
Qty	Amt	Qty	Amt	Qty	Amt	Qty	Amt	Qty	Amt	Qty	Amt	Qty	Amt	Qty	Amt	Qty	Amt
211	.808			750	2.087	1272	3.592	90	.042							2323	6.529

BASIS FOR COST ESTIMATES:

FY-79 & Prior		FY-80 Current		FY-81 Budget		FY-82 Budget - 1		FY-83		FY-84		FY-85		FY-86		TOTAL PROGRAM	
Qty	Amt	Qty	Amt	Qty	Amt	Qty	Amt	Qty	Amt	Qty	Amt	Qty	Amt	Qty	Amt	Qty	Amt

SPARES																	
NON RECUR		.072		.100		.090		.042									.304
KITS	211	.736	750	1.987	1272	3.502	90	0								2323	6.225
OMA																	
TOTALS	211	.808	750	2.087	1272	3.592	90	.042								2323	6.529

METHOD OF IMPLEMENTATION: The modifications will be applied to production for new units and be retrofit by the contractor for previously manufactured units.

KIT DELIVERY SCHEDULE:

FY-79&Prior				FY-80				FY-81				FY-82				FY-83				FY-84				FY-85				FY-86				FUTURE			
1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
											211	122	122	122	124	274	274			262	262														
																274	274																		

INSTALLATION SCHEDULE:

FY-79&Prior				FY-80				FY-81				FY-82				FY-83				FY-84				FY-85				FY-86				FUTURE			
1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
								211	122			124	274			276	262																		
								122	122			274	274			262																			

CLASSIFICATION

REPORTS CONTROL SYMBOL DD-COMP (AR) 1092	EQUIPMENT	MODIFICATION	DATE 11 Dec 80									
APPROPRIATION/BUDGET ACTIVITY APA/FY 82		MODIFICATION TITLE AND NO. MK-1564()/AIC PIP NO. 1-81-07-0700										
<u>Equipment Models Affected:</u> N/A <u>Description/Justification:</u> The improved kit, MK-1564() AIC is an upgraded version of the current communications system package used on the SPH-4 Flyers Protective Helmet, compatible with the improved communications system control, C-10414()/ARC, to be used in new/retrofit Army Aircraft systems. The kit consists of improved cables and connectors, a linear microphone M-162()/AIC, and an integrated earcup/transducer assembly. Implementation of this PI will provide increased TEMPEST protection for Army aircraft, improved speech intelligibility, and a reduced noise environment at the aviator's ear. <u>Development Status:</u> N/A <u>Milestones:</u> <table><tr><td>Initiate Engrg</td><td>1Q</td><td>81</td></tr><tr><td>Ind Eval Complete</td><td>3Q</td><td>81</td></tr><tr><td>IPR/Prod Decision</td><td>4Q</td><td>81</td></tr></table>				Initiate Engrg	1Q	81	Ind Eval Complete	3Q	81	IPR/Prod Decision	4Q	81
Initiate Engrg	1Q	81										
Ind Eval Complete	3Q	81										
IPR/Prod Decision	4Q	81										

CLASSIFICATION**P-1 SHOPP LIST PAGE NO.**

1-148 - 1/15/81

EXHIBIT P-43.

MODIFICATION TITLE AND NO: MK-1564()/AIC PIP NO. 1-81-07-0700

PROJECT FINANCIAL PLAN: (Amount in millions of dollars)

FY-79 & Prior		FY-80 Current		FY-81 Budget		FY-82 Budget - 1		FY-83		FY-84		FY-85		FY-86		TOTAL PROGRAM	
Qty	Amt	Qty	Amt	Qty	Amt	Qty	Amt	Qty	Amt	Qty	Amt	Qty	Amt	Qty	Amt	Qty	Amt
				0		.055		.060									.549

BASIS FOR COST ESTIMATES:

FY-79 & Prior		FY-80 Current		FY-81 Budget		FY-82 Budget - 1		FY-83		FY-84		FY-85		FY-86		TOTAL PROGRAM	
Qty	Amt	Qty	Amt	Qty	Amt	Qty	Amt	Qty	Amt	Qty	Amt	Qty	Amt	Qty	Amt	Qty	Amt

SPARES				0		.055		.060									.549
NON RECUR																	
KITS																	
QMA																	
TOTALS				0		.055		.060									.549

METHOD OF IMPLEMENTATION: The changes will be applied during production of new helmets.KIT DELIVERY SCHEDULE:

FY-79&Prior				FY-80				FY-81				FY-82				FY-83				FY-84				FY-85				FY-86				FUTURE							
1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4				

N/A

INSTALLATION SCHEDULE:

FY-79&Prior				FY-80				FY-81				FY-82				FY-83				FY-84				FY-85				FY-86				FUTURE			
1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4

N/A

CLASSIFICATION												
REPORTS CONTROL SYMBOL DD-COMP (AR) 1092	EQUIPMENT	MODIFICATION										
		DATE 11 Dec 80										
APPROPRIATION/BUDGET ACTIVITY APA/FY 82	MODIFICATION TITLE AND NO. MK-994/AR Test Facilities Kit 1-82-07-0205											
<u>Models of Aircraft Affected:</u> <u>Description/Justification:</u> Test Cables - To obtain additional test cables for the MK-994/AR to allow the RT-()/ARC-186(V) AM/FM Radio Set and Phase Front Homing module to be fully tested using the standard SLAE Test Facilities Kit MK-944/AR. <u>Development Status:</u> Coordination and concurrence PCB was held on 15 Oct 79. <u>Milestones:</u> <table> <tr> <td>Proj Initiated</td> <td>1Q 81</td> </tr> <tr> <td>Test Initiated</td> <td>1Q 80</td> </tr> <tr> <td>IPR/Prod Decision</td> <td>1Q 81</td> </tr> <tr> <td>Prod Con Award</td> <td>4Q 81</td> </tr> <tr> <td>First Prod Hdw/Del</td> <td>3Q 82</td> </tr> </table>			Proj Initiated	1Q 81	Test Initiated	1Q 80	IPR/Prod Decision	1Q 81	Prod Con Award	4Q 81	First Prod Hdw/Del	3Q 82
Proj Initiated	1Q 81											
Test Initiated	1Q 80											
IPR/Prod Decision	1Q 81											
Prod Con Award	4Q 81											
First Prod Hdw/Del	3Q 82											

CLASSIFICATION

P-1 SHOPP LIST PAGE NO.

1-150 - 1/15/81

EXHIBIT P.43

MODIFICATION TITLE AND NO: MK-994/AR Test Cables PIP NO. 1-82-07-0205

PROJECT FINANCIAL PLAN: (Amount in millions of dollars)

FY-79 & Prior		FY-80 Current		FY-81 Budget		FY-82 Budget - 1		FY-83		FY-84		FY-85		FY-86		TOTAL PROGRAM	
Qty	Amt	Qty	Amt	Qty	Amt	Qty	Amt	Qty	Amt	Qty	Amt	Qty	Amt	Qty	Amt	Qty	Amt
					0		.178										.413

BASIS FOR COST ESTIMATES:

FY-79 & Prior		FY-80 Current		FY-81 Budget		FY-82 Budget - 1		FY-83		FY-84		FY-85		FY-86		TOTAL PROGRAM	
Qty	Amt	Qty	Amt	Qty	Amt	Qty	Amt	Qty	Amt	Qty	Amt	Qty	Amt	Qty	Amt	Qty	Amt

SPARES																	
NON RECUR																	
KITS						273	.036	227	.178							500	.036
OMA							.199										.377
TOTALS						273	0	227	.178							500	.413

METHOD OF IMPLEMENTATION: The new cables will be stocked in depot and requisitioned by units having the MK-944/AR

KIT DELIVERY SCHEDULE:

FY-79&Prior				FY-80				FY-81				FY-82				FY-83				FY-84				FY-85				FY-86				FUTURE	
1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4		
												136	137			227																	

INSTALLATION SCHEDULE:

FY-79&Prior				FY-80				FY-81				FY-82				FY-83				FY-84				FY-85				FY-86				FUTURE	
1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4		

N/A

CLASSIFICATION

REPORTS CONTROL SYMBOL
DD-COMP (AR) 1092

EQUIPMENT

MODIFICATION

DATE 11 Dec 80

APPROPRIATION/BUDGET ACTIVITY
APA/FY 82MODIFICATION TITLE AND NO.
AN/ASN-137 PIP NO. 1-80-07-0082Equipment Models Affected: N/A

Description/Justification: To improve the Lightweight Doppler Navigation System (LDNS) in performance and ability to interface with other aircraft systems including fire control computers, and those control systems, such as IACS, which employ the MIL-STD-1553 dual redundant multiplex digital data transfer systems. All of the improvements were discussed and agreed upon at a POS/NAV User-Developer Conference and Doppler AN/ASN-137 Configuration Control Board Meeting held Oct 78. The following improvements were agreed upon:

- a. Compatibility and interface with the MIL-STD-1553 multiplex data bus.
- b. Interface with a Projected Map Display.
- c. Computer Memory Zeroing.
- d. Waterproof Receiver - Transmitter Antenna for CH-47 installation.
- e. Redesign True Air Speed input circuitry to interface with AAH and COBRA aircraft transmitters.

Development Status: The PIP contract was awarded 4Q 79.

Milestone:

Proj Initiated	4Q 79
IPR/PROD Decision	1Q 82
First Prod Hdw Delivery	1Q 81
First Kit Applied	2Q 82
Last Kit Applied	4Q 82

CLASSIFICATION

P-1 SHOPP LIST PAGE NO.

1-152 - 1/15/81

EXHIBIT D. 43

MODIFICATION TITLE AND NO: AN/ASN-137 Improved LDNS PIP NO. 1-80-07-0082

PROJECT FINANCIAL PLAN: (Amount in millions of dollars)

FY-79 & Prior		FY-80 Current		FY-81 Budget		FY-82 Budget - 1		FY-83		FY-84		FY-85		FY-86		TOTAL PROGRAM	
Qty	Amt	Qty	Amt	Qty	Amt	Qty	Amt	Qty	Amt	Qty	Amt	Qty	Amt	Qty	Amt	Qty	Amt
6	2.133		.227		.768		.475		.865							6	4.468

BASIS FOR COST ESTIMATES:

FY-79 & Prior		FY-80 Current		FY-81 Budget		FY-82 Budget - 1		FY-83		FY-84		FY-85		FY-86		TOTAL PROGRAM	
Qty	Amt	Qty	Amt	Qty	Amt	Qty	Amt	Qty	Amt	Qty	Amt	Qty	Amt	Qty	Amt	Qty	Amt

SPARES																	2.335
NON RECUR																	
KITS	6	2.133		.227		.768		.475		.865						6	2.133
OHA																	
TOTALS	6	2.133		.227		.768		.475		.865						6	4.468

METHOD OF IMPLEMENTATION: The changes will be phased into production.

KIT DELIVERY SCHEDULE:

FY-79&Prior				FY-80				FY-81				FY-82				FY-83				FY-84				FY-85				FY-86				FUTURE							
1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4				
								1	1	2	2																												

INSTALLATION SCHEDULE:

FY-79&Prior				FY-80				FY-81				FY-82				FY-83				FY-84				FY-85				FY-86				FUTURE						
1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4			
												2	2	2																								

CLASSIFICATION

REPORTS CONTROL SYMBOL DD-COMP (AR) 1092	MODIFICATION	DATE 11 Dec 80										
APPROPRIATION/BUDGET ACTIVITY Aircraft/FY 82/86	MODIFICATION TITLE AND NO. AN/FPM-40 PIP 1-79-07-0009											
<u>Models of Equipment Affected:</u> N/A <u>Description/Justification:</u> The purpose of the PIP is to improve reliability and maintainability of the radar to an acceptable level and provide moving target identification (MTI) features to improve operational performance. The technical approach is to replace the Receiver/Transmitter unit with a new solid state unit having the MTI feature. This PIP is a major revision to the previously approved PIP for the AN/FPM-40 reflecting addition of MTI as requested by USACC. <u>Development Status:</u> Contract for Phase I was awarded and integration of the contractor equipment and the AN/FSQ-84 started. <u>Milestones:</u> <table><tr><td>Proj Int</td><td>2Q79 Complete</td></tr><tr><td>Prod Contract Award</td><td>2Q83</td></tr><tr><td>1st Proc Hdw Del</td><td>4Q83</td></tr><tr><td>1st Kit Appl</td><td>2Q84</td></tr><tr><td>Last Kit Appl</td><td>2Q86</td></tr></table>			Proj Int	2Q79 Complete	Prod Contract Award	2Q83	1st Proc Hdw Del	4Q83	1st Kit Appl	2Q84	Last Kit Appl	2Q86
Proj Int	2Q79 Complete											
Prod Contract Award	2Q83											
1st Proc Hdw Del	4Q83											
1st Kit Appl	2Q84											
Last Kit Appl	2Q86											

CLASSIFICATION

P-1 SHOPP LIST PAGE NO.

1-154 - 1/15/81

EXHIBIT P-3a

MODIFICATION TITLE AND NO: AN/FPN-40 PIP NO 1-79-07-0009

PROJECT FINANCIAL PLAN: (Amount in millions of dollars)

FY-79		FY-80		FY-81		FY-82		FY-83		FY-84		FY-85		FY-86		TOTAL	
& Prior		Current		Budget		Budget - 1										PROGRAM	
Qty	Amt	Qty	Amt	Qty	Amt	Qty	Amt	Qty	Amt	Qty	Amt	Qty	Amt	Qty	Amt	Qty	Amt
								7	2.913	8	7.240	16	8.200	8	4.300	39	22.653

BASIS FOR COST ESTIMATES

	FY-79		FY-80		FY-81		FY-82		FY-83		FY-84		FY-85		FY-86		TOTAL PROGRAM	
	& Prior		Current		Budget		Budget - 1											
	Qty	Amt	Qty	Amt	Qty	Amt	Qty	Amt	Qty	Amt	Qty	Amt	Qty	Amt	Qty	Amt	Qty	Amt
SPARES																		
NON RECUR (OMA)	(1.116)		(8.0)		(.191)		(.864)		(.178)		(.142)		(.100)					(3.401)
KITS									7	2.913	8	7.240	16	8.200	8	4.300	39	22.653
OMA											(15)	(.244)	(16)	(.355)	(8)	(.192)	(39)	(.791)
TOTALS									7	2.913	8	7.240	16	8.200	8	4.300	39	22.653

METHOD OF IMPLEMENTATION: Contractor teams will apply the modifications on site. Technical baselines will be updated.

KIT DELIVERY SCHEDULE:

FUTURE SCHEDULE:																																			
FY-79&Prior				FY-80				FY-81				FY-82				FY-83				FY-84				FY-85				FY-86				FUTURE			
1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4				
			</																																

INSTALLATION SCHEDULE:

<u>FY-79&Prior</u>	<u>FY-80</u>	<u>FY-81</u>	<u>FY-82</u>	<u>FY-83</u>	<u>FY-84</u>	<u>FY-85</u>	<u>FY-86</u>	<u>FUTURE</u>
1 2 3 4	1 2 3 4	1 2 3 4	1 2 3 4	1 2 3 4	1 2 3 4	1 2 3 4	1 2 3 4	
					5 5 5	4 4 4 4	4 4	

UNCLASSIFIED

CLASSIFICATION

REPORTS CONTROL SYMBOL DD-COMP (AR) 1092	EQUIPMENT	MODIFICATION	DATE 17 Dec 80										
APPROPRIATION/BUDGET ACTIVITY Aircraft FY 82		MODIFICATION TITLE AND NO. RT-1354/ARC-186(V) 1-83-07-0701											
<u>Models of Equipment Affected:</u> N/A. <u>Description/Justification:</u> The front panel of the RT-1354/ARC-186(V) will be modified to correct shortcomings defined during operational testing of the radio. The Independent Evaluation Report (Aug 80) prepared by CDC, Fort Rucker, Ala. recommends modification of the radio. Modification of the radio will improve operator efficiency when changing radio modes and improve safety during Nap of the Earth flight. The improvements to be made include: (1) Provide additional space between frequency control knobs and switches; (2) Provide a new frequency display format; and (3) Increase front panel to letter size to be more compatible with night vision goggles. <u>Development Status:</u> FY 83 New Start Program <u>Milestones:</u> <table><tr><td>Project Initiated</td><td>1Q 83</td></tr><tr><td>IPR/Production Decision</td><td>4Q 84</td></tr><tr><td>Production Contract Award</td><td>2Q 85</td></tr><tr><td>First Kit Applied</td><td>1Q 86</td></tr><tr><td>Last Kit Applied</td><td>4Q 86</td></tr></table>				Project Initiated	1Q 83	IPR/Production Decision	4Q 84	Production Contract Award	2Q 85	First Kit Applied	1Q 86	Last Kit Applied	4Q 86
Project Initiated	1Q 83												
IPR/Production Decision	4Q 84												
Production Contract Award	2Q 85												
First Kit Applied	1Q 86												
Last Kit Applied	4Q 86												

CLASSIFICATION

**P-1 SHOPP LIST
ITEM NO.**

PAGE NO.

1-156 - 1/15/81

EXHIBIT P-3a

MODIFICATION TITLE AND NO: RT-1354/ARC-186(V) PIP NO: 1-83-07-0701

PROJECT FINANCIAL PLAN: (Amount in millions of dollars)

FY-1980		FY-1981		FY-1982		FY-1983		FY-1984		FY-1985		FY-1986		FY-1987		TOTAL	
A Prior		Current		Budget		Budget		Budget		Budget		Budget		Budget		PROGRAM	
Qty	Amt	Qty	Amt	Qty	Amt	Qty	Amt	Qty	Amt	Qty	Amt	Qty	Amt	Qty	Amt	Qty	Amt
							1.220		.125	700	.537	400	.339			1100	2.221

BASIS FOR COST ESTIMATES:

FY-1980		FY-1981		FY-1982		FY-1983+1		FY-1984		FY-1985		FY-1986		FY-1987		TOTAL	
A Prior		Current		Budget		Budget		Budget		Budget		Budget		Budget		PROGRAM	
Qty	Amt	Qty	Amt	Qty	Amt	Qty	Amt	Qty	Amt	Qty	Amt	Qty	Amt	Qty	Amt	Qty	Amt
SPARES																	
NON RECUR							1.220		.125		.075		.075				1.495
KITS										700	.462	400	.264			1100	.726
(OMA)													(.044)			1100	(.044)
TOTAL							1.220		.125	700	.537	400	.339			1100	2.221

METHOD OF IMPLEMENTATION: Kits will be applied at the AVIM level. The procurement data package will be modified for future procurement of the radio.

KIT DELIVERY SCHEDULE:

FY-80 Prior				FY-1981				FY-1982				FY-1983				FY-1984				FY-1985				FY-1986				FY-1987				Future	
1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4		

INSTALLATION SCHEDULE:

FY-PRIOR				FY-1981				FY-1982				FY-1983				FY-1984				FY-1985				FY-1986				FY-1987				FUTURE	
1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4		

1-157 - 1/15/81

275 275
275 275

AIRCRAFT PROCUREMENT, ARMY

Section 9

Flight Simulator Procurement Summary

1-158 - 1/15/81

FY 82 BUDGET ESTIMATE

FLIGHT SIMULATORS PROCUREMENT PROGRAM

APPROPRIATION: Aircraft Procurement, Army

<u>System</u>	<u>Type</u>	<u>FY 81 & Prior Qty/Amount</u>	<u>FY 82 Qty/Amount</u>	<u>FY 83 Qty/Amount</u>	<u>FY 84 Qty/Amount</u>	<u>FY 85 Qty/Amount</u>	<u>FY 86 Qty/Amount</u>	<u>Cost to Complete Qty/Amount</u>	<u>Total Cost Qty/Amount</u>
UH-1 (2B24) (SSNA09500)	FS	21/62.4	- -	- -	- -	- -	- -	- -	21/62.4
CH-47 (2B31) (SSNA09100)	FS	3/24.8	- -	1/12.3	- -	1/15.4	- -	- -	5/52.5
AH-1 (2B33) (SSNA09300)	FWS	1/21.8	2/31.3	2/35.0	- -	- -	- -	- -	5/88.1
UH-60 (2B38) (SSNA09400)	FS	- -	- -	- -	3/53.4	2/38.2	3/61.5	- -	8/153.1
AH-64 (2B40) (SSNA09000)	FWS	- -	- -	- -	- -	- -	- -	4/120. 0	4/120.0
GRAND TOTAL		109.0	31.3	47.3	53.4	53.6	61.5	120.0	476.1

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REPORT DOCUMENTATION PAGE		READ INSTRUCTIONS BEFORE COMPLETING FORM
1. REPORT NUMBER	2. GOVT ACCESSION NO. AD-A097	3. RECIPIENT'S CATALOG NUMBER 378
4. TITLE (and Subtitle) (in 5 parts) Department of the Army Justification of Estimates for Fiscal Year 1982, Submitted to Congress January 1981, Procurement Programs, Aircraft, Missiles, Wpn and Tracked Cbt Veh, Ammunition and Other Proc, Army		5. TYPE OF REPORT & PERIOD COVERED Army Procurement Budget Justification, FY 1982
7. AUTHOR(s) Department of the Army		6. PERFORMING ORG. REPORT NUMBER
9. PERFORMING ORGANIZATION NAME AND ADDRESS HQDA, Office of the Deputy Chief of Staff for Research, Development, and Acquisition (DAMA-PPP-B) Washington, DC 20310		8. CONTRACT OR GRANT NUMBER(s)
11. CONTROLLING OFFICE NAME AND ADDRESS HQDA, Office of the Deputy Chief of Staff for Research, Development, and Acquisition (DAMA-AOA-S) Washington, DC 20310		10. PROGRAM ELEMENT, PROJECT, TASK AREA & WORK UNIT NUMBERS
14. MONITORING AGENCY NAME & ADDRESS (if different from Controlling Office)		12. REPORT DATE January 1981
		13. NUMBER OF PAGES 407 (includes all 5 parts)
		15. SECURITY CLASS. (of this report) UNCLASSIFIED
16. DISTRIBUTION STATEMENT (of this Report) Approved for public release; distribution unlimited.		18a. DECLASSIFICATION/DOWNGRADING SCHEDULE
17. DISTRIBUTION STATEMENT (of the abstract entered in Block 20, if different from Report)		
18. SUPPLEMENTARY NOTES		
19. KEY WORDS (Continue on reverse side if necessary and identify by block number) Army Procurement Programs Budget Justification Book covering Aircraft, Missiles, Weapons and Tracked Combat Vehicles, Ammunition and Other Procurement, Army Appropriations programs submitted by the Army to Congress January 1981 for Fiscal Year 1982.		
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, provides backup data for the Army Budget submission for FY 1982. Included are Summaries of Requirements, Program and Financing Statements and Selected Data Sheets. (This document has been declassified for NTIS distribution).		