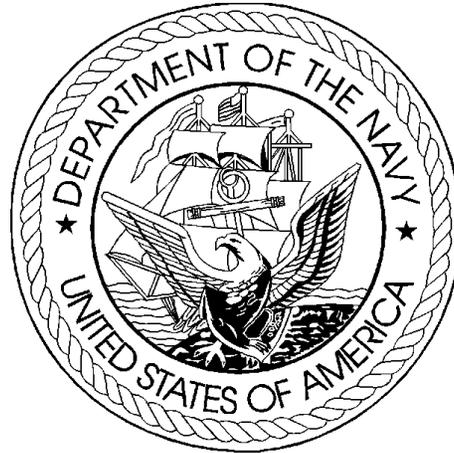


DEPARTMENT OF THE NAVY  
FISCAL YEAR (FY) 2005  
BUDGET ESTIMATES



JUSTIFICATION OF ESTIMATES  
FEBRUARY 2004

AIRCRAFT PROCUREMENT, NAVY  
Volume II:  
BUDGET ACTIVITY 5

UNCLASSIFIED

Department of the Navy

FY 2005 Procurement Program

Exhibit P-1

APPROPRIATION: 1506N Aircraft Procurement, Navy

DATE: February 2004

LINE NO	ITEM NOMENCLATURE	IDENT CODE	(DOLLARS) FY 2005 UNIT COST	TOA, \$ IN MILLIONS				S E C
				-----FY 2003----- QUANTITY	COST	-----FY 2004----- QUANTITY	COST	
BUDGET ACTIVITY 05: Modification of Aircraft								
-----								
Modification of Aircraft								
23	0511 EA-6 Series	A		314.2		334.8		165.7 U
24	0514 AV-8 Series	A		58.6		57.4		20.8 U
25	0519 F-14 Series	A		5.3		-		- U
26	0522 Adversary	A		8.2		2.6		5.5 U
27	0525 F-18 Series	A		385.7		361.0		412.5 U
28	0526 H-46 Series	A		65.3		86.4		71.2 U
29	0527 AH-1W Series	A		15.6		10.0		2.2 U
30	0528 H-53 Series	A		27.8		24.4		9.8 U
31	0530 SH-60 Series	A		21.1		19.3		11.7 U
32	0532 H-1 Series	A		9.1		10.9		3.5 U
33	0537 EP-3 Series	A		57.6		55.4		28.3 U
34	0538 P-3 Series	A		167.8		139.2		135.0 U
35	0541 S-3 Series	A		29.6		8.3		1.9 U
36	0544 E-2 Series	A		25.0		50.3		15.1 U
37	0549 Trainer A/C Series	A		3.2		10.4		14.0 U
38	0556 C2-A	A		28.8		35.1		29.6 U
39	0560 C-130 Series	A		6.2		7.5		15.4 U
40	0561 FEWSG	A		.6		.6		.6 U
41	0562 Cargo/Transport A/C Series	A		3.7		13.2		8.3 U
42	0564 E-6 Series	A		56.1		48.2		19.7 U

\* ITEMS UNDER \$50,000

UNCLASSIFIED

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UNCLASSIFIED

Department of the Navy

FY 2005 Procurement Program

Exhibit P-1

APPROPRIATION: 1506N Aircraft Procurement, Navy

DATE: February 2004

LINE NO	ITEM NOMENCLATURE	IDENT CODE	(DOLLARS) FY 2005 UNIT COST	TOA, \$ IN MILLIONS						S E C
				-----FY 2003----		-----FY 2004----		-----FY 2005----		
				QUANTITY	COST	QUANTITY	COST	QUANTITY	COST	
43	0566 Executive Helicopters Series	A			15.7		26.3		21.8	U
44	0567 Special Project Aircraft	A			10.8		56.1		12.4	U
45	0569 T-45 Series	A			21.7		22.2		44.2	U
46	0570 Power Plant Changes	A			15.6		21.4		24.4	U
47	0571 JPATS Series				-		.5		.6	U
48	0575 Aviation Life Support Mods				.5		6.3		7.4	U
49	0576 Common ECM Equipment	A			28.4		25.6		43.2	U
50	0577 Common Avionics Changes	A			68.7		147.5		167.5	U
51	0582 ID SYSTEMS	A			-		1.8		1.6	U
52	0590 V-22 (Tilt/Rotor Acft) Osprey	B			4.0		4.8		3.4	U
TOTAL Modification of Aircraft					1,455.0		1,587.5		1,297.2	

\* ITEMS UNDER \$50,000

UNCLASSIFIED

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**Fiscal Year 2005 Budget Estimates  
Budget Appendix Extract Language**

**AIRCRAFT PROCUREMENT, NAVY (APN)**

For construction, procurement, production, modification, and modernization of aircraft, equipment, including ordnance, spare parts, and accessories therefor; specialized equipment; expansion of public and private plants, including the land necessary therefor, and such lands and interests therein, may be acquired, and construction prosecuted thereon prior to approval of title; and procurement and installation of equipment, appliances, and machine tools in public and private plants; reserve plant and Government and contractor-owned equipment layaway, [\$9,110,848,000] \$8,767,867,000, to remain available for obligation until September 30, [2006] 2007, of which \$89,846,000 shall be for the Navy Reserve and Marine Corps Reserve. (10 U.S.C. 5013, 5063, 7201, 7341; Department of Defense Appropriations Act, 2004.)

[For an additional amount for “Aircraft Procurement, Navy”, \$158,600,000, to remain available until September 30, 2006.] (Emergency Supplemental Appropriations Act for Defense and for the Reconstruction of Iraq and Afghanistan, 2004.)

Exhibit P-40, BUDGET ITEM JUSTIFICATION						DATE: <b>February 2004</b>					
APPROPRIATION/BUDGET ACTIVITY Aircraft Procurement, Navy/APN-5 Aircraft Modifications						P-1 ITEM NOMENCLATURE EA-6 Series Modifications					
Program Element for Code B Items:						Other Related Program Elements					
	Prior Years	ID Code	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	To Complete	Total
QTY		A									
COST (In Millions)	1912.8	A	314.2	334.8	165.7	102.9	38.7	20.1	19.2	147.9	3056.3
<p>This line item funds modifications to the EA-6 aircraft. The EA-6B Prowler is a four-seat derivative of the A-6 Intruder medium attack aircraft. Among its features are a computer controlled electronic surveillance and control system and high power jamming transmitters in various frequency bands that are contained in pods mounted externally on the five aircraft pylons. The overall goal of the modifications budgeted in FY 2005 is the procurement of Wing Center Sections (WCS), Low Band Transmitters, Block 89A upgrades, ASN-130A Replacement, J52 Reliability Improvements, Multifunctional Information Distribution System (LINK-16) and ICAP III upgrades.</p>											
(TOA, \$ in Millions)											
OSIP No.	Description	Prior Years	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	To Complete	Total
19-79	ALQ-99 PODS	746.845	18.895	11.801	11.376	11.461	15.238	15.857	19.105	147.917	998.495
32-85	EA-6B Structural Improvements	608.912	150.158	209.188	68.261	27.482	16.343	4.249	0.144		1084.737
	DERF Non-add	4.250									
111-87	J-52 Engines	31.638	6.402	4.645	0.345						43.030
	DERF Non-add	6.524									
42-93	EA-6B Block 89A Avionics	494.691	17.910	11.125							523.726
01-01	ICAP III	30.773	113.091	88.800	74.269	56.162	5.800				368.895
05-03	MIDS		7.719	9.219	11.452	7.749	1.313				37.452
	<b>Total</b>	<b>1912.833</b>	<b>314.175</b>	<b>334.778</b>	<b>165.702</b>	<b>102.854</b>	<b>38.694</b>	<b>20.106</b>	<b>19.249</b>	<b>147.917</b>	<b>3056.308</b>
Totals may not add due to rounding											
FY 2002 Defense Emergency Response Funding (DERF) received augments OSIPs 32-85 and 111-87.											

Exhibit P-3a	Individual Modification
MODIFICATION TITLE: ALQ-99 PODS	
MODELS OF SYSTEMS AFFECTED:	TYPE MODIFICATION: <u>Reliability/Mission Capability</u>
DESCRIPTION/JUSTIFICATION:	
<u>UNIVERSAL EXCITER UPGRADE</u>	
<p>The Universal Exciter Upgrade (UEU) provides a 30% improvement in reliability over that of the current Universal Exciter (UE / MTBF = 100 hrs). Increased maintainability, elimination of multiple configurations and performance improvements are additional improvements. ORD #474-88-97 defines the UEU requirements. The UEU entered Engineering and Manufacturing Development in 1991 and achieved Milestone III approval for full rate production in Apr 96. A contract for 119 UEUs was awarded in Sep 96. Follow-on procurements are in-process/planned for fiscal years 98-01, which will bring total UEU procurements up to 480. Pursuant to that inventory objective, an FY99 Congressional (Kosovo Supplemental) add of \$39M was received in Sep 99. The modification of UEs to UEUs is accomplished via "turn key" sole source contract. Initial UEU deliveries occurred in Jul 98, which allowed for an Initial Operational Capability in Apr 99. With the planned follow-on procurements, deliveries continued through 2003. GFE and consumables are required to support these deliveries. ALQ-99 Exciters are Weapons Replaceable Assemblies that are readily removed and installed in the ALQ-99 Pod, thus no installation effort/funding is associated with this program. This capability will be available for all the 120 aircraft, which includes four Naval Air Reserve aircraft. This requirement does not apply to the National Guard.</p>	
<u>LOW BAND TRANSMITTER</u>	
<p>The Low Band Transmitter (LBT) will provide the EA-6B with an expanded jamming capability against the Early Warning/Acquisition Radars and Communication Links of modern Integrated Air Defense Systems. Reliability and maintainability will also be greatly improved over that of current ALQ-99 Transmitters. Following a competitive acquisition and Milestone II approval, Engineering and Manufacturing Development was initiated in Sep 96. Critical Design Review was conditionally approved in Dec 97; however, a follow-up review to close out action items was completed in Nov 98. Testing to date has consisted of prototype testing conducted at government and contractor facilities. This testing has successfully demonstrated the key performance parameters identified in OPNAV/N88 later Ser No. N880C3/6S663399 of 26 JUL 96 can be attained by the present design. Fabrication of Engineering Development Models (EDMs) began in FY00. EDMs will be used for contractor and Navy testing required to support LRIP and Milestone III approval. The LBT inventory objective is 208. ALQ-99 Transmitters are Weapons Replaceable Assemblies that are readily removed and installed in the ALQ-99 Pod, thus no installation effort/funding is associated with this program. Aircraft Operational Flight Program changes are required to support aircraft integration of this transmitter. This capability will be available for all 120 aircraft, which includes four Naval Air Reserve aircraft. This requirement does not apply to the National Guard. In FY04 total program increases \$3.5M as a result of Congressional Plus-up for ALQ-99 Low Band Transmitters.</p>	
<u>PAO TRANSMITTER COOLANT MODIFICATION</u>	
<p>EA-6B/ALQ-99 Transmitters and support equipment currently use Coolanol for the dielectric coolant required to dissipate heat from and prevent arcing of high voltage power supplies. Coolanol costs over \$300/gallon, is a known carcinogen and must be handled as a hazardous material. Given that the EA-6B is the sole remaining user of Coolanol 35, it's future availability is in doubt. The replacement coolant for Coolanol is Polyalphaolefin (PAO), which costs less than \$25/gallon and is non-hazardous. PAO is widely used by other U.S. military platforms and systems. Additionally, the equipment has to be converted in order to be compatible with the Consolidated Automated Support System (CASS) High Power Device Test Set (HPDTS) modification. HPDTS will allow CASS to test ALQ-99 Transmitters, thereby eliminating the requirements for the EA-6B peculiar Transmitter Test Station (TTS). This transition from the TTS to the CASS is expected to begin in Dec 00. The cooling system of the HPDTS only supports PAO, thus all units tested with it must use PAO as their coolant. ALQ-99 Transmitters require modification in order to utilize PAO, because the polymer-based material currently used as high voltage lead insulation and wire harness identification markers dissolve when exposed to PAO. This material must be replaced with an improved material that through testing has been identified to be impervious to PAO. ECP AV-97-038 delineates the efforts required to modify Transmitters to a PAO compatible configuration. 1296 Transmitters and 1400 high voltage power supply modules will be converted by a government/contractor field modification team. This requirement does not apply to the National Guard. In FY03, total program increases \$2M as result of Congressional Plus-up for Band-4 TWT improvement.</p>	
<u>SUPPORT EQUIPMENT</u>	
<p>Introduction of new/modified ALQ-99 pod equipment requires new/modified organizational, intermediate and depot level support equipment, such as modifications to the pod test set to support Low Band Transmitter and Band 7/8 Transmitter, modifications to High Power Device Test Set (HPDTS) to extend frequency coverage to test Band 9/10 transmitters, new Test Program Sets to test Low Band Transmitter and Band 9/10 Transmitters and modified Intermediate/depot level support equipment to test Band 7/8 Transmitters.</p>	
<u>ENGINEERING CHANGES</u>	
<p>This ALQ-99 PODS Operational and Safety Improvement Program covers ALQ-99 Pod modifications required to improve reliability/maintainability/availability, enhance mission capability, resolve obsolescence issues, and correct deviations found in testing or in the field</p>	
<u>BAND 9/10 TRANSMITTER:</u>	
<p>The Band 9/10 Transmitter (Band 9/10) provides the EA-6B an expanded jamming capability against target tracking/fire control radars of modern Integrated Air Defense Systems. Reliability and maintainability are also greatly improved over that of current ALQ-99 Transmitters. Following a competitive acquisition, Engineering and Manufacturing Development of the Band 9/10 was initiated in Jan 92. Production began in FY98, with Initial Operational Capability being accomplished in Nov 99. A total of 204 Band 9/10 Transmitters were procured between FY98 and FY00 with the last transmitter planned to deliver in Nov 02. The Band 9/10 inventory objective is 263. ALQ-99 Transmitters are Weapons Replaceable Assemblies that are readily removed and installed in the ALQ-99 Pod, thus no installation effort/funding is associated with this program. This capability will be available for all the 120 EA-6B aircraft, which includes four Naval Air Reserve aircraft. This requirement does not apply to the National Guard. In FY02, total program increases \$13.5M as result of a Congressional Plus-up to procure ten (10) additional Band 9/10 Transmitters. In FY03, total program increases \$14M as result of Congressional Plus-up for 14 additional Band 9/10 Transmitters and support.</p>	
<u>EXTENDED HIGH BAND RADOME:</u>	
<p>A modified ALQ-99 Extended High Band Radome is required for compatibility with the Band 9/10 Transmitter (Band 9/10). This Radome incorporates unique sections of the radome composite structure to prevent damage by impinging energy radiation from the Band 9/10. Between FY98 and FY01, 250 ALQ-99 radomes were modified to this configuration. Future requirements for these radomes will be met by new production, vice modification, as there are no more existing assets to modify. ALQ-99 Radomes are Weapons Replaceable Assemblies that are readily removed and installed in the ALQ-99 Pod, thus no installation effort/funding is associated with this program. This capability will be available for the total of 120 EA-6B aircraft, which includes four Naval Air Reserve aircraft. This requirement does not apply to the National Guard. In FY02, total program increases \$.5M as result of a Congressional Plus-up to procure ten (10) Band 9/10 Radomes.</p>	

DEVELOPMENT STATUS/MAJOR DEVELOPMENT MILESTONES:  
 Delivery of UEU Engineering Design Models (EDMs) began in the first quarter of FY1995 with developmental and operational testing completed in the second quarter of FY1996 achieving approval for full production, milestone III in March 1996 and followed by a production contract award. LBT program is proceeding through remainder of E&MD with LRIP decision expected 3rd quarter of FY2004.

FINANCIAL PLAN: (TOA, \$ in Millions)

	Prior Years		FY 2003		FY 2004		FY 2005		FY 2006		FY 2007		FY 2008		FY 2009		To Complete		Total	
	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$
RDT&E		14.1		2.0																
PROCUREMENT																				
Installation Kits																				
Installation Kits N/R																				
Installation Equipment	2,575	199.9																		
Universal Exciter Upgrade	480	223.3																		
Lowband Transmitter					9	7.5	13	10.8												
PAO Transmitter Mod	1,296	5.8																		
Band 9/10 Transmitter	221	119.4	14	13.5																
Band 9/10 Radome	260	4.9																		
ALQ-99 Band-4 TWT IM				1.8																
BAND 9/10 GFE		0.3																		
REPAIR OF GFE (UEU)		6.2																		
Installation Equipment N/R		11.2				3.5														
Engineering Change Orders		1.1		0.1		0.1														
Data		9.6		0.1		0.1														
Training Equipment		1.6																		
Support Equipment	6	96.5		0.3		0.2		0.6												
ILS		4.3																		
Other Support		44.0		3.2		0.4														
Interim Contractor Support																				
Installation Cost	1,207	18.9																		
<b>Total Procurement</b>		<b>746.8</b>		<b>18.9</b>		<b>11.8</b>		<b>11.4</b>												

Notes:

1. UEU Repair of GFE costs are included in the UEU Installed Equipment line.
2. Install schedules not provided for GFE that fits into the POD without structural modification, or for equipment not requiring APN-5 funding for installation into the pod/aircraft (e.g.: LBT, UEU).
3. Funding for Repair of GFE was reported in Installation Cost for PB01 and has been redirected to the Install Equipment line under UEU Install Equipment.
4. Total Band 9/10 Transmitters include 5 EDM's.
5. Totals may not add due to rounding.

Exhibit P-3a	Individual Modification
MODIFICATION TITLE:	<u>EA-6B Structural Improvements (OSIP 32-85)</u>
MODELS OF SYSTEMS AFFECTED:	<u>EA-6 Series Modifications</u> <span style="float: right;"><u>TYPE MODIFICATION:</u> <u>Safety of Flight</u></span>
<p><b>DESCRIPTION/JUSTIFICATION:</b> This Omnibus Operational and Safety Improvement Program covers EA-6B Structural modifications and EA-6B peculiar avionics modifications arising from test/deficiencies and those safety of flight related improvements. Included are Structural Improvement modifications which includes fixes for areas found to be deficient during aircraft fatigue test; <b>Wing Center Sections</b> (WCS) which replace wings that have either cracked due to stress corrosion or have reached their wing fatigue life limit; <b>Structural Data Recording System</b> (SDRS) which will provide a more accurate measurement of Fatigue Life Expenditure (FLE); the Joint Mission Planner which provides for the maintenance of the current EA-6B mission planning system (TEAMS) and its subsequent migration to TAMP; Outer Wing Panels (OWP) will replace OWPs that have reached their fatigue life limit. This OSIP also includes the Connectivity and USQ-113 programs. In FY02 received supplemental funds in the amount of \$35M for 10 additional WCS. In FY03, total program increases as a result of Congressional Plus-ups in the amount of \$9M for 3 additional WCS, USQ113 Jammers \$10.5M, On-Board Oxygen Generating System (OBOGS) \$1M, and Ready Room Mission Rehearsal System \$3.1M, and an additional \$60M for OWP. In FY04, total program increases as a result of Congressional Plus-ups in the amount of \$15M for WCS acceleration and \$70M for OWPs in the FY2004 Emergency Supplemental Appropriations Act, \$2M Plus-up for Ready Rm Mission/ Mission Reprogramming Unit, \$4M Plus-up for USQ113, and \$35M for OWPs via Congressional add.</p> <p><b>ASN-130A Replacement:</b> Funding for this upgrade was provided via a Cost Reduction Effectiveness Improvement Council (CREIC) initiative during the POM-02 process. The aging ASN-130A will be replaced with the ASN-172, with a combined inertial navigation/GPS system 2nd EGI. Reliability and maintainability will be improved.</p> <p><b>Outer Wing Panel</b> (OWP) replacement program includes ongoing fatigue life expenditure (FLE) analysis. The solution may range from an airframe change to improve FLE to replace the OWP to ensure the EA-6B availability through FY-2015. In FY02 received supplemental in the amount of \$25M to procure up to 3 additional Outer Wing Panels. Also received \$4.25M DERF funds for OWP production line start up and tooling.</p> <p><b>Mission Reprogramming Unit (MRU):</b> This program resulted from an Affordable Readiness Initiative (ARI) that provides an upgrade to the existing memory input/output capability of the mission computer. Tape driven devices which are no longer being produced are being replaced with PCMCIA cards that are more reliable and maintainable. Funding for this upgrade resided in OSIP 1-01 during the PB01 process.</p> <p><b>EA-6B Power PC initiative:</b> This initiative proposes to add a COTS PowerPC processor to the AYK-14, XN-11/CP-2357. This special EA-6B AYK-14 chassis has already been upgraded to support COTS SRAs on its VME backplane. Funding is required for COTS hardware (Processor SRA) and integration kit (Memory Bridge SRA), addition of a few laboratory support tools, development testing, and modification to technical publication source data and maintenance plans.</p> <p><b>EA-6B (MK-GRU-EA7) Ejection seat initiative:</b> The GRUAE7 ejection seat, used in the EA-6B aircraft uses standard British hardware to build the GRUAE7 ejection seat. This hardware is replaced 100% during depot rework and 224 day "O" level maintenance. The cost of standard British hardware is 4 to 5 times more than the US (NAS/MS) hardware. Replacing the standard British hardware with US (NAS/MS) hardware will drastically reduce the material cost for the GRUAE7 ejection seat.</p> <p><b>EA-6B Digital Flight Control System (DFCS):</b> The DFCS program comprises the adaption of existing Digital Flight Control Computer (DFCC) and Digital Control Panel (DCP) to replace the existing Air Navigational Computer (ANC) and control panel presently fitted to the EA-6B aircraft. This replacement DFCS will be configured to ensure only the minimum number of aircraft changes are required. Intended to eliminate the problem of spurious inputs to Flight Control Systems.</p>	

DEVELOPMENT STATUS/MAJOR DEVELOPMENT MILESTONES:  
 Major milestones include the completion of SDRS and 9th Squadron Support Equipment.

	Prior Years		FY 2003		FY 2004		FY 2005		FY 2006		FY 2007		FY 2008		FY 2009		To Complete		Total		
	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	
RDT&EN																					
Procurement																					
Installation Kits	3,101	36.3																			
SDRS Kit	122	1.7																			
ASN-130A Replacement (2nd EG)	44	0.3	28	0.2	21	0.2	28	0.2													
Wing Center Section (WCS)	81	246.4	17	52.3	15	47.8	9	36.0													
Outer Wing Panel (OWP)	1	25.0	19	60.0	34	102.7															
DFCS							24	7.1													
AN/USQ-113	145	3.1	10	8.0	10	5.0															
Mission Rehearsal System (MRS)				0.7																	
Wing Center Section Acceleration						2.7															
Installation Kits N/R		20.3																			
DFCS				3.0	2	3.2	1	2.3													
AN/USQ-113				2.5		0.5															
Mission Rehearsal System (MRS)				2.1																	
On-Board Oxygen Gene (OBOG)			2	1.0																	
Wing Center Section						3.5															
Installation Equipment	1,949	88.5																			
Mission Reprogramming Unit		11.2																			
Ejection Seat				0.3																	
Power PC Integration				2.0		0.6		0.5													
ASN-130A Replacement (2ND EGI)		1.4		0.3		2.4		2.4													
DFCS																					
Installation Equipment N/R		17.9																			
Ready Rm Mission Rehearsal						1.5		1.5													
DFCS								5.2													
OWP								0.0											0.3		
Engineering Change Orders		1.3		0.5		0.5		0.5											0.5		
Data		11.6		0.2				0.7											0.4		
Training Equipment	15	3.0				0.2															
Support Equipment		15.1																			
ILS		1.6		0.2		0.5															
Other Support		51.3		1.7		10.1													2.5		
Interim Contractor Support																					
Installation Cost	854	73.0	59	13.9	52	22.0	41	16.2													
<b>Total Procurement</b>		<b>608.9</b>		<b>150.2</b>		<b>209.2</b>		<b>68.3</b>													

\* Totals less than \$50K.  
 1. Totals may not add due to rounding.  
 2. ASN-130A Installation Kit quantities (121) do not include VEP aircraft quantity (1) obtained via FY00 Congressional Add.  
 3. In FY 2002, received \$4.25M Defense Emergency Response Funding (DERF) for OWP, \$25M in supplemental funds for OWP, and \$35M for WCS.

**Exhibit P-3a**

MODELS OF SYSTEMS AFFECTED: EA-6B Series Modifications MODIFICATION TITLE: Wing Center Section (OSIP 32-85)

INSTALLATION INFORMATION:

METHOD OF IMPLEMENTATION: Contractor Turn-key for FY97 Procurement. Commercial & Organic installs FY98 and out.

ADMINISTRATIVE LEADTIME: 6 Months PRODUCTION LEADTIME: 28 Months

CONTRACT DATES: FY 2003: Dec-02 FY 2004: Dec-03 FY 2005: Dec-04

DELIVERY DATE: FY 2003: Mar-05 FY 2004: Mar-06 FY 2005: Mar-07

(\$ in Millions)

Cost:	Prior Years		FY 2003		FY 2004		FY 2005		FY 2006		FY 2007		FY 2008		FY 2009		To Complete		TOTAL		
	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	
FY 2002 & PY() kits	44	38.6	18	13.3	19	18.8															
FY 2003 () kits					2	1.6	15	15.0													
FY 2004 () kits							1	0.8													
FY 2005 () kits																					
FY 2006 () kits																					
FY 2007 () kits																					
FY 2008 () kits																					
FY 2009 () kits																					
To Complete () kits																					
<b>TOTAL</b>	<b>44</b>	<b>38.6</b>	<b>18</b>	<b>13.3</b>	<b>21</b>	<b>20.4</b>	<b>16</b>	<b>15.7</b>													

1. Totals may not add due to rounding
2. FY03 Includes WCS installed for VEP aircraft making 123 aircraft.

Installation Schedule

	FY 2002 & Prior	FY 2003				FY 2004				FY 2005				FY 2006				FY 2007				FY 2008			
		1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
In	44	4	4	5	5	4	6	6	5	4	4	4	4												
Out	33	2	1	5	4	4	4	5	5	4	6	6	5												

	FY 2009				FY 2010				To Complete	TOTAL
	1	2	3	4	1	2	3	4		
In										
Out										

\*FY00 installation costs included in FY97 & prior turn-key contracts.

**Exhibit P-3a**

MODELS OF SYSTEMS AFFECTED: EA-6B Series Modifications MODIFICATION TITLE: SDRS KITS (OSIP 32-85)

INSTALLATION INFORMATION:

METHOD OF IMPLEMENTATION: Contractor Mod Team/Organic

ADMINISTRATIVE LEADTIME: 1 Months PRODUCTION LEADTIME: 5 Months

CONTRACT DATES: FY 2003: N/A FY 2004: N/A FY 2005: N/A

DELIVERY DATE: FY 2003: N/A FY 2004: N/A FY 2005: N/A

(\$ in Millions)

Cost:	Prior Years		FY 2003		FY 2004		FY 2005		FY 2006		FY 2007		FY 2008		FY 2009		To Complete		TOTAL		
	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	
FY 2002 & PY() kits	122	2.0																		122	2.0
FY 2003 ( ) kits																					
FY 2004 ( ) kits																					
FY 2005 ( ) kits																					
FY 2006 ( ) kits																					
FY 2007 ( ) kits																					
FY 2008 ( ) kits																					
FY 2009 ( ) kits																					
To Complete ( ) kits																					
<b>TOTAL</b>	<b>122</b>	<b>2.0</b>																		<b>122</b>	<b>2.0</b>

Installation Schedule

	FY 2002 & Prior	FY 2003				FY 2004				FY 2005				FY 2006				FY 2007				
		1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	
In	122																					
Out	112	10																				

	FY 2008				FY 2009				To Complete	TOTAL
	1	2	3	4	1	2	3	4		
In										122
Out										122

**Exhibit P-3a**

MODELS OF SYSTEMS AFFECTED: EA-6B Series Modification MODIFICATION TITLE: ASN-130A Replacement (2nd EGI)

INSTALLATION INFORMATION:

METHOD OF IMPLEMENTATION: Organic Installations

ADMINISTRATIVE LEADTIME: 1 Month PRODUCTION LEADTIME: 3 Months

CONTRACT DATES: FY 2003: Nov-02 FY 2004: Nov-03 FY 2005: Nov-04

DELIVERY DATE: FY 2003: Feb-03 FY 2004: Feb-04 FY 2005: Feb-05

(\$ in Millions)

Cost:	Prior Years		FY 2003		FY 2004		FY 2005		FY 2006		FY 2007		FY 2008		FY 2009		To Complete		TOTAL	
	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$
FY 2002 & PY() kits	14	0.2	30	0.4																
FY 2003 () kits			11	0.2	17	0.2														
FY 2004 () kits					12	0.2	9	0.2												
FY 2005 () kits							15	0.3												
FY 2006 () kits																				
FY 2007 () kits																				
FY 2008 () kits																				
FY 2009 () kits																				
To Complete () kits																				
<b>TOTAL</b>	<b>14</b>	<b>0.2</b>	<b>41</b>	<b>0.6</b>	<b>29</b>	<b>0.4</b>	<b>24</b>	<b>0.4</b>												

Installation Schedule

	FY 2002 & Prior	FY 2003				FY 2004				FY 2005				FY 2006				FY 2007			
		1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
In	14	6	12	12	11	6	7	10	6	5	4	7									
Out	8	5	10	12	12	5	7	7	7	8	6	6	8								

	FY 2006				FY 2007				To Complete	TOTAL
	1	2	3	4	1	2	3	4		
In										
Out										

\* Indicates cost less than \$50K

**Exhibit P-3a**

MODELS OF SYSTEMS AFFECTED: EA-6B Series Modification MODIFICATION TITLE: DFCS

INSTALLATION INFORMATION:

METHOD OF IMPLEMENTATION: Organic Installations

ADMINISTRATIVE LEADTIME: 1 Month PRODUCTION LEADTIME: 1 Months

CONTRACT DATES: FY 2003: \_\_\_\_\_ FY 2004: \_\_\_\_\_ FY 2005: Oct-04

DELIVERY DATE: FY 2003: \_\_\_\_\_ FY 2004: \_\_\_\_\_ FY 2005: Oct-04

(\$ in Millions)

Cost:	Prior Years		FY 2003		FY 2004		FY 2005		FY 2006		FY 2007		FY 2008		FY 2009		To Complete		TOTAL		
	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	
FY 2002 & PY() kits																					
FY 2003 () kits																					
FY 2004 () kits					2	1.2	1	0.1													
FY 2005 () kits																					
FY 2006 () kits																					
FY 2007 () kits																					
FY 2008 () kits																					
FY 2009 () kits																					
To Complete () kits																					
<b>TOTAL</b>					<b>2</b>	<b>1.2</b>	<b>1</b>	<b>0.1</b>													

Installation Schedule

	FY 2002 & Prior	FY 2003				FY 2004				FY 2005				FY 2006				FY 2007			
		1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
In																					
Out							1	1				1									

	FY 2006				FY 2007				To Complete	TOTAL
	1	2	3	4	1	2	3	4		
In										
Out										

\* Indicates cost less than \$50K

1. The (DFCS) Program quantity and schedule adjustments were the result of budget constraints. The original program called for 120 aircraft to have the current AFCS replaced with DFCS. However the independent cost estimate completed after the OSD budget determined that this plan exceeded the funding available. The DFCS program has since been de-scoped. 2. Three kits in FY04 are validation and verification kits.

Exhibit P-3a Individual Modification

MODIFICATION TITLE: J-52 Engines (OSIP 111-87)

MODELS OF SYSTEMS AFFECTED: EA-6B Series Modification TYPE MODIFICATION: Reliability Upgrade

DESCRIPTION/JUSTIFICATION:

J-52 Engine Improvements: The J-52 engine is a legacy gas turbine engine, which powers the EA-6B and has been in service since the 1960's. This initiative will capitalize on R&D efforts funded through the Engine Component Improvement Program (CIP). Through the CIP, the J-52 Team has identified specific reliability discrepancy trends and has developed appropriate Engineering Change Proposals (ECP) and Power Plant Changes (PPC). To specifically address the risk of uncontained turbine blade failures and design various other engine improvements, CIP projects were undertaken. The results include an improved Turbine Exhaust Case (TEC) that provides low pressure turbine (LPT) containment and other durability improvements. These improvements will be replaced at normal engine overhaul, incurring no additional installation costs. Installations will be performed concurrently with Standard Depot Level Maintenance (SDLM), Engine Overhaul and other O&M,N funded availabilities. Received \$6.524M of DERF funds in FY02.

DEVELOPMENT STATUS/MAJOR DEVELOPMENT MILESTONES: Development of the Improved Turbine Exhaust Case (TEC) began in FY95 using engine CIP and contractor funds. Testing and ECP approval was completed in the first quarter of FY98 (OCT 97), followed by a production contract award. All ECPs are approved and Technical Directives (TD) are completed or in process. Incorporation of initial PPC 306 TEC kits is in process. Initial PPC 304 kits are on order and NAVICP is currently procuring attrition parts.

FINANCIAL PLAN: (TOA, \$ in Millions)

	Prior Years		FY 2003		FY 2004		FY 2005		FY 2006		FY 2007		FY 2008		FY 2009		To Complete		Total		
	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	
RDT&E																					
PROCUREMENT																					
Installation Kits																					
Turbine Blade Containment Kit	218	25.5	51	5.8	33	4.6	2	0.3													
Installation Kits N/R																					
Installation Equipment																					
Installation Equipment N/R																					
Engineering Change Orders																					
Data		0.2																			
Training Equipment																					
Support Equipment		0.3																			
AXIAM Equipment		2.5																			
ILS		0.2																			
Other Support		3.0		0.6		0.1		0.1													
Installation Cost																					
<b>Total Procurement</b>		<b>31.6</b>		<b>6.4</b>		<b>4.6</b>		<b>0.3</b>													

Notes:

1. Totals may not add due to rounding
2. Funding provided within the FYDP reflects an approved Reduction in Total Ownership Cost (RTOC) initiative.
3. Installations will be performed concurrently with Standard Depot Level Maintenance (SDLM), Engine Overhauls and other O&M,N funded efforts.
4. FY 2002 received \$6.524M Defense Emergency Response Funding (DERF) for J52.

Exhibit P-3a		Individual Modification	
MODIFICATION TITLE:	<u>Block 89A Avionics (OSIP 42-93)</u>		
MODELS OF SYSTEMS AFFECTED:	<u>EA-6 Series Modifications</u>	TYPE MODIFICATION:	<u>Safety of Flight/ Reliability</u>
<p>DESCRIPTION/JUSTIFICATION:</p> <p>This omnibus Operational and Safety Improvement Program covers EA-6B ICAP II Block 89A Avionics systems modifications to install required communications, navigation, and miniaturized technology improvements. The avionics common systems upgrade includes incorporation of: (1) AN/ARC-210 VHF/UHF radios having SINCGARS and HAVEQUICK modes for inter-operability with Air Force, ground, and NATO forces. (2) The Embedded GPS Inertial Navigation System (EGI) provides a closely coupled GPS-INS solution and replaces the ASN-50 AHRS which has very poor reliability. (3) Full integration of the Electronic Flight Instrumentation System (EFIS), Control Display Navigation Unit (CDNU), and Digital Signal Data Converter (DSDC), which were installed as part of AFC778-779. This OSIP provides for upgrade of the DSDC for use in Block 89A. The DSDC functions as an interface unit for the EFIS and is connected to the 1553 Navigation data bus to provide additional navigation data to the aircrew. (4) The AYK-14 computer will be upgraded with Very High Speed Integrated Circuit Technology (VHSIC) improving processing, memory, and throughput. The upgraded computer (CP-2357) will retain the outer form factor of the current computer and incorporate a new backplane that supports the new VHSIC processor Module and provides VME-bus expansion slots. Discrete and Serial Modules (DSM) replace the Serial Interface Module-A (SIM-A) cards. (5) Mission Planning System: The AN/TSQ-142 Mission Planner provides operational flight program loading, maps, EW libraries, jammer techniques, HARM data, and performs data reduction. Modifications to the AN/TSQ-142 are required to support the Block-89A upgrade, and to support transition of EA-6B MPS. (6) Misc. Avionics: Additional Engineering Change Proposals (ECP) and procurement of avionics, such as ARC-199 Radios, CIU/E, HARM, Dual EGI, and Night Vision capability in all aircraft. * Funding for the Night Vision Device upgrade was provided via an FY00 Congressional add and is comprised of the goggles themselves, engineering and integrations effort, display and lighting modifications, and various electrical/structural changes.</p>			

**DEVELOPMENT STATUS/MAJOR DEVELOPMENT MILESTONES:**

The ARC-210 UHF/VHF radio is a common avionics system to be installed in all Navy aircraft, and has undergone OPEVAL on the F-18, UH-1, and other platforms. The EA-6B has been approved for installation. The EFIS system completed successful OPEVAL and was approved for full rate production and will require minimal upgrade FOT&E for the required interface and incorporation of EGI data. The EGI is common avionics with the F-18 EGI and has been extensively flight tested in that platform. The AYK-14 (XN-\*) computer utilizes modules that are common avionics to Navy inventory, and a chassis similar to the current XN-4. The similarity and commonality of the upgraded AYK-14 required little additional qualification testing. DT began on the Block -89A system in FY-98, with an intensive integrated Test and Evaluation period. Testing of software, upgraded avionics, including some regression testing of existing functionality, and testing of the mission planning system are currently being conducted.

FINANCIAL PLAN: (TOA, \$ in Millions)

	Prior Years		FY 2003		FY 2004		FY 2005		FY 2006		FY 2007		FY 2008		FY 2009		To Complete		Total		
	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	
<b>PROCUREMENT</b>																					
Installation Kits	20	59.5																			
Block 82 to 89A Kit	47	43.6																			
Block 89 to 89A Kit	45	13.9																			
Installation Kits N/R	8	61.4																			
Installation Equipment	101	5.8																			
Block 82 to 89A Equip	6	14.8																			
Block 89 to 89A	30	2.0																			
ARC-210 Equip	50	4.2																			
AN/AYK-14	45	7.3																			
NVD Equip	122	12.3																			
CIU/Encoder	66	18.6																			
Installation Equipment N/R	2	8.2																			
Engineering Change Orders		0.5		0.2																	
Data		12.2																			
Training Equipment		13.4																			
Support Equipment		43.2																			
ILS		9.0																			
Other Support		88.3		2.2		0.1															
Interim Contractor Support																					
Installation Cost	176	76.4	27	15.5	11	11.0															
<b>Total Procurement</b>		<b>494.7</b>		<b>17.9</b>		<b>11.1</b>															

Notes:

1. EGI and ARC-210 Equipment quantities are funded under the Common Avionics budget.
2. In FY00, total program includes \$31.0M as a result of a Congressional plus-up for Night Vision Devices (NVD).
3. NVD funding reported in PB01 under Installation Kits and Installation Equipment was redirected to Installation Equipment and represents multiple NVD goggles per Install Kit.
4. \* Totals less than 50k.
5. Totals may not add due to rounding.

**Exhibit P-3a**

MODELS OF SYSTEMS AFFECTED: EA-6B Series Block 89A Modifications MODIFICATION TITLE: Block 89A Avionics System Improvement ( OSIP 42-93)

INSTALLATION INFORMATION:

METHOD OF IMPLEMENTATION: Commercial and Organic Installations

ADMINISTRATIVE LEADTIME: 6 Months PRODUCTION LEADTIME: 12 Months

CONTRACT DATES: FY 2003: N/A FY 2004: N/A FY 2005: N/A

DELIVERY DATE: FY 2003: N/A FY 2004: N/A FY 2005: N/A

(\$ in Millions)

Cost:	Prior Years		FY 2003		FY 2004		FY 2005		FY 2006		FY 2007		FY 2008		FY 2009		To Complete		TOTAL	
	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$
FY 2002 & PY() kits	73	74.5	14	18.1	5	10.8														
FY 2003 () kits																				
FY 2004 () kits																				
FY 2005 () kits																				
FY 2006 () kits																				
FY 2007 () kits																				
FY 2008 () kits																				
FY 2009 () kits																				
To Complete () kits																				
<b>TOTAL</b>	<b>73</b>	<b>74.5</b>	<b>14</b>	<b>18.1</b>	<b>5</b>	<b>10.8</b>														

Installation Schedule

	FY 2002 & Prior	FY 2003				FY 2004				FY 2005				FY 2006				FY 2007				
		1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	
In	73	4	4	3	3	2	2	1														
Out	61	6	6	4	4	3	3	2	2	1												

	FY 2008				FY 2009				To Complete	TOTAL
	1	2	3	4	1	2	3	4		
In										
Out										

1. A/C inducted four months ahead of delivery, as this is done concurrent with SDLM, and tear down and partial SDLM must be completed before kit installation.

**Exhibit P-3a**

MODELS OF SYSTEMS AFFECTED: EA-6B Series Modifications MODIFICATION TITLE: Night Vision Devices

INSTALLATION INFORMATION:

METHOD OF IMPLEMENTATION: Organic

ADMINISTRATIVE LEADTIME: \_\_\_\_\_ PRODUCTION LEADTIME: 6 Months

CONTRACT DATES: FY 2003: N/A FY 2004: N/A FY 2005: N/A

DELIVERY DATE: FY 2003: N/A FY 2004: N/A FY 2005: N/A

(\$ in Millions)

Cost:	Prior Years		FY 2003		FY 2004		FY 2005		FY 2006		FY 2007		FY 2008		FY 2009		To Complete		TOTAL	
	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$
FY 2002 & PY() kits	103	1.7	13	0.4	6	0.2														
FY 2003 ( ) kits																				
FY 2004 ( ) kits																				
FY 2005 ( ) kits																				
FY 2006 ( ) kits																				
FY 2007 ( ) kits																				
FY 2008 ( ) kits																				
FY 2009 ( ) kits																				
To Complete ( ) kits																				
<b>TOTAL</b>	<b>103</b>	<b>1.7</b>	<b>13</b>	<b>0.4</b>	<b>6</b>	<b>0.2</b>														

Installation Schedule

	FY 2002 & Prior	FY 2003				FY 2004				FY 2005				FY 2006				FY 2007			
		1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
In	103	3	3	3	4	6															
Out	32	26	26	19	3	3	3	4	6												

	FY 2008				FY 2009				To Complete	TOTAL
	1	2	3	4	1	2	3	4		
In										
Out										

1. NVD installation costs are not budgeted on an annualized basis as the cost to procure and install kits were provided as part of an FY00 Congressional plus-up.

Exhibit P-3a Individual Modification

MODIFICATION TITLE: **ICAP III (OSIP 01-01)**

MODELS OF SYSTEMS AFFECTED: **EA-6 Series Modifications**

TYPE MODIFICATION: **Safety of Flight/ Reliability**

**DESCRIPTION/JUSTIFICATION:**

This Operational and Safety Improvement Program covers the EA-6B Improved Capabilities III (ICAP III) systems modifications to install required radar and communications receiver, displays, and connectivity improvements. Additionally, this modification removes over 70 aging and unreliable Weapons Replaceable Assemblies (WRAs). Specifically, the modification program replaces the ALQ-99 receiver System with the LR-700 receiver system, replaces the TDY-43 display system with a new COTS based display system for the Pilot and three Electronic Countermeasures Officers (ECMOs), replaces the Recorder Reproducer Set (RRS) with a new Digital Recorder, incorporates the Multi-Mission Advanced Tactical Terminal (MATT) which provides reception of datalinks such as TIBS, incorporates the USQ-113 Communication Receiver/Jammer with the Onboard System, updates mission planning for ICAP III, and provides provisions for Link-16.

**DEVELOPMENT STATUS/MAJOR DEVELOPMENT MILESTONES:**

Following a Full and Open Competition, Milestone II approval was received, and an EMD RDT&E development contract was awarded to the Northrop Grumman Corporation in March 1998. Following a DT/OT test period, completion of an OA and an LRIP decision, an LRIP contract will be awarded in FY03. Following completion of OPEVAL and a Milestone III decision, a full rate production contract will be awarded in FY04.

**FINANCIAL PLAN: (TOA, \$ in Millions)**

	Prior Years		FY 2003		FY 2004		FY 2005		FY 2006		FY 2007		FY 2008		FY 2009		To Complete		Total		
	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	
RDT&E		273.3		38.8		22.8		23.7													
<b>PROCUREMENT</b>																					
Installation Kits																					
ICAPIII			10	69.4	11	60.7	10	53.2													
Installation Kits N/R				0.1																	
Installation Equipment																					
Installation Equipment N/R						0.5		1.0													
Engineering Change Orders																					
Data				1.2		1.5		0.5													
Training Equipment	2	29.9		35.9		2.3															
Support Equipment		0.4		3.7		4.7		2.4													
ILS						1.5		1.5													
Other Support		0.5		2.8		2.9		1.1													
Interim Contractor Support																					
Installation Cost					10	14.6	11	14.5													
<b>Total Procurement</b>	<b>2</b>	<b>30.8</b>		<b>113.1</b>		<b>88.8</b>		<b>74.3</b>													

**Notes:**

- In FY00, total program increases \$29.9M as result of a Congressional Plus-up for Simulators for a trainer upgrade.
- Installation costs include Repair Incident to Modification (RIM) efforts in FY06 and out.
- Totals may not add due to rounding.
- Total quantity of 35 does not include 2 kits procured/installed via E&MD program

Exhibit P-3a

MODELS OF SYSTEMS AFFECTED: EA-6B Series ICAP III Upgrade MODIFICATION TITLE: ICAP III System Improvement ( OSIP 1-01)

INSTALLATION INFORMATION:

METHOD OF IMPLEMENTATION: Commercial

ADMINISTRATIVE LEADTIME: 5 Months PRODUCTION LEADTIME: \* 12 Months

CONTRACT DATES: FY 2003: Jun-03 FY 2004: Jun-04 FY 2005: Jan-05

DELIVERY DATE: FY 2003: Jun-04 FY 2004: Jun-05 FY 2005: Jan-06

(\$ in Millions)

Cost:	Prior Years		FY 2003		FY 2004		FY 2005		FY 2006		FY 2007		FY 2008		FY 2009		To Complete		TOTAL		
	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	
FY 2002& Prior ( ) kits																					
FY 2003 ( ) kits					10	14.6															
FY 2004 ( ) kits							11	14.5													
FY 2005 ( ) kits																					
FY 2006 ( ) kits																					
FY 2007 ( ) kits																					
FY 2008 ( ) kits																					
FY 2009 ( ) kits																					
To Complete (0) kits																					
<b>TOTAL</b>					<b>10</b>	<b>14.6</b>	<b>11</b>	<b>14.5</b>													

- \* Aircraft are inducted concurrent with other Depot work to maximize Primary Aircraft Inventory (PAI) levels and is not impacted despite delay in initial ICAP III kit deliveries.
- \*\* ICAP III Kit is delivered in three parts. Part 1 of the kit delivery is delivered 12 months after ARO. Also production rate for ICAP III kit was increased to maintain IOC schedule requirements.
- \*\*\* MIDS and ICAP III are interconnected programs but have their own OSIPS. However, procurement quantities and install quantities will match because the goal is to have both MIDS and ICAP III work as part of a system. As a result, the installs will be done at the same time to ensure that the two are placed on a common aircraft.

	FY 2002 & Prior	FY 2003				FY 2004				FY 2005				FY 2006				FY 2007			
		1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
In																					
Out							4	6		1	3	3	3								

	FY 2008				FY 2009				To Complete	TOTAL
	1	2	3	4	1	2	3	4		
In										
Out										

Note: Two (2) aircraft kits were developed and installed in EA-6B EMD RDT&E program. Total Inventory of 37 (35 of which is in production).

Exhibit P-3a	Individual Modification																																																																																																																																																																																																																																																																																																																																																																																																																															
MODIFICATION TITLE:	<b>MIDS (LINK 16) (OSIP 05-03)</b>																																																																																																																																																																																																																																																																																																																																																																																																																															
MODELS OF SYSTEMS AFFECTED:	<u>EA-6 Series Modifications</u>																																																																																																																																																																																																																																																																																																																																																																																																																															
	TYPE MODIFICATION: <u>Safety of Flight/ Reliability</u>																																																																																																																																																																																																																																																																																																																																																																																																																															
<p>DESCRIPTION/JUSTIFICATION:                  This Operational and Safety Improvement Program covers integration of required flight systems and Link-16 into the EA-6B. These programs cover procurement and installation of (a) Government Off the Shelf (GOTS) Inter-cockpit Communications System (ICS), CXP (IFF), TACAN Modification, and modification of the of Pre-Planned Product Improvement (P3I) Ethernet processor into the already installed AN/AYK-14 XN-11 and (b) previously developed and approved for production MIDS Low Volume Terminal. These modifications will allow the EA-6B aircraft to fly with new FAA mandated requirements and to participate in the Link-16 network. Items within (a) above are required prerequisites for (b) installs. Training Systems, Publications, and Support Equipment will be procured.</p>																																																																																																																																																																																																																																																																																																																																																																																																																																
<p>DEVELOPMENT STATUS/MAJOR DEVELOPMENT MILESTONES:                  The MIDS LVT is a common DoD system. The Navy will procure an existing ICS system based on requirements and via a competitive contract. The AYK-14 XN-11 Ethernet modification is currently in development.</p>																																																																																																																																																																																																																																																																																																																																																																																																																																
FINANCIAL PLAN: (TOA, \$ in Millions)																																																																																																																																																																																																																																																																																																																																																																																																																																
	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th rowspan="2"></th> <th colspan="2">Prior Years</th> <th colspan="2">FY 2003</th> <th colspan="2">FY 2004</th> <th colspan="2">FY 2005</th> <th colspan="2">FY 2006</th> <th colspan="2">FY 2007</th> <th colspan="2">FY 2008</th> <th colspan="2">FY 2009</th> <th colspan="2">To Complete</th> <th colspan="2">Total</th> </tr> <tr> <th>Qty</th> <th>\$</th> </tr> </thead> <tbody> <tr> <td>RDT&amp;E</td> <td></td> <td>28.7</td> <td></td> <td></td> <td></td> <td>1.8</td> <td></td> <td>2.4</td> <td></td> </tr> <tr> <td>PROCUREMENT</td> <td></td> </tr> <tr> <td>Installation Kits</td> <td></td> </tr> <tr> <td>MIDS A KITS</td> <td></td> <td></td> <td>14</td> <td>0.4</td> <td>11</td> <td>0.3</td> <td>10</td> <td>0.3</td> <td></td> </tr> <tr> <td>MIDS B KITS</td> <td></td> <td></td> <td>14</td> <td>4.9</td> <td>11</td> <td>3.1</td> <td>10</td> <td>2.9</td> <td></td> </tr> <tr> <td>Installation Kits N/R</td> <td></td> </tr> <tr> <td>Installation Equipment</td> <td></td> <td></td> <td>14</td> <td>1.9</td> <td>11</td> <td>1.8</td> <td>10</td> <td>1.7</td> <td></td> </tr> <tr> <td>installation equipment N/R</td> <td></td> </tr> <tr> <td>Engineering Change Orders</td> <td></td> </tr> <tr> <td>Data</td> <td></td> <td></td> <td></td> <td>0.1</td> <td></td> <td>0.1</td> <td></td> <td>0.5</td> <td></td> </tr> <tr> <td>Training Equipment</td> <td></td> <td></td> <td></td> <td>*</td> <td></td> <td>0.5</td> <td></td> <td>0.4</td> <td></td> </tr> <tr> <td>Support Equipment</td> <td></td> <td></td> <td></td> <td>*</td> <td></td> <td>0.1</td> <td></td> <td>0.1</td> <td></td> </tr> <tr> <td>ILS</td> <td></td> <td></td> <td></td> <td>*</td> <td></td> <td>0.2</td> <td></td> <td>0.3</td> <td></td> </tr> <tr> <td>Other Support</td> <td></td> <td></td> <td></td> <td>0.3</td> <td></td> <td>1.9</td> <td></td> <td>3.9</td> <td></td> </tr> <tr> <td>Interim Contractor Support</td> <td></td> </tr> <tr> <td>Installation Cost</td> <td></td> <td></td> <td></td> <td></td> <td>10</td> <td>1.3</td> <td>11</td> <td>1.3</td> <td></td> </tr> <tr> <td><b>Total Procurement</b></td> <td></td> <td></td> <td></td> <td>7.7</td> <td></td> <td>9.2</td> <td></td> <td>11.5</td> <td></td> </tr> </tbody> </table>		Prior Years		FY 2003		FY 2004		FY 2005		FY 2006		FY 2007		FY 2008		FY 2009		To Complete		Total		Qty	\$	RDT&E		28.7				1.8		2.4														PROCUREMENT																						Installation Kits																						MIDS A KITS			14	0.4	11	0.3	10	0.3														MIDS B KITS			14	4.9	11	3.1	10	2.9														Installation Kits N/R																						Installation Equipment			14	1.9	11	1.8	10	1.7														installation equipment N/R																						Engineering Change Orders																						Data				0.1		0.1		0.5														Training Equipment				*		0.5		0.4														Support Equipment				*		0.1		0.1														ILS				*		0.2		0.3														Other Support				0.3		1.9		3.9														Interim Contractor Support																						Installation Cost					10	1.3	11	1.3														<b>Total Procurement</b>				7.7		9.2		11.5																															
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<p>Notes:                  1. Totals may not add due to rounding                  2. * Totals less than 50K.                  3. Total of 39 Kits include 4 which are used for labs and trainers and will not be operational aircraft.                  4. A kits = provisions including cables, brackets, and interface devices. B kits = Link 16 black box.</p>																																																																																																																																																																																																																																																																																																																																																																																																																																

**Exhibit P-3a**

MODELS OF SYSTEMS AFFECTED: EA-6B Series MODIFICATION TITLE: MIDS (Provisions and Link 16) (OSIP 05-03)

INSTALLATION INFORMATION:

METHOD OF IMPLEMENTATION: FIELD DEPOT INSTALL

ADMINISTRATIVE LEADTIME: 3 Months PRODUCTION LEADTIME: 12 Months

CONTRACT DATES: FY 2003: Dec-03 FY 2004: Dec-04 FY 2005: Dec-05

DELIVERY DATE: FY 2003: Dec-04 FY 2004: Dec-05 FY 2005: Dec-06

(\$ in Millions)

Cost:	Prior Years		FY 2003		FY 2004		FY 2005		FY 2006		FY 2007		FY 2008		FY 2009		To Complete		TOTAL		
	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	
FY 2002 & PY() kits																					
FY 2003 () kits					10	1.3															
FY 2004 () kits							11	1.3													
FY 2005 () kits																					
FY 2006 () kits																					
FY 2007 () kits																					
FY 2008 () kits																					
FY 2009 () kits																					
TO COMPLETE () KITS																					
<b>TOTAL</b>	<b>0</b>	<b>0.0</b>	<b>0</b>	<b>0.0</b>	<b>10</b>	<b>1.3</b>	<b>11</b>	<b>1.3</b>													

\*\* Aircraft are inducted one month before kit delivery

NOTES

\*\*\* MIDS and ICAP III are interconnected programs but have their own OSIPS. However, procurement quantities and install quantities will match because the goal is to have both MIDS and ICAP III work as part of a system. As a result, the ins As a result the installs will be done at the same time to ensure that the two are placed on a common aircraft.

	FY 2002 & Prior	FY 2003				FY 2004				FY 2005				FY 2006				FY 2007			
		1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
In							4	6			5	6									
Out									1	3	3	3									

	FY 2008				FY 2009				To Complete	TOTAL
	1	2	3	4	1	2	3	4		
In										
Out										

Exhibit P-40, BUDGET ITEM JUSTIFICATION								DATE: February 2004				
APPROPRIATION/BUDGET ACTIVITY				P-1 ITEM NOMENCLATURE								
Aircraft Procurement, Navy/APN-5 Aircraft Modifications				AV-8B Series Modifications								
Program Element for Code B Items:				Other Related Program Elements								
	Prior Years	ID Code		FY 2003	FY 2004	*FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	To Complete	Total
QUANTITY		A										
COST (In Millions)	375.5	A		58.6	57.4	20.8	28.7	16.6	16.3	16.6	46.3	636.8
<p>This line item funds modifications to AV-8B aircraft. The AV-8B is a single engine, single crewmember aircraft capable of vertical/short take-off and landing (V/STOL) operations. The AV-8B meets the Marine Corps requirements for a light attack aircraft to provide responsive offensive air power that can operate austere forward bases in direct support of ground forces. The overall goal of the modifications budgeted in FY 2005 is to include continued incorporation of Operational and Safety improvements to the aircraft; completion of power cable MIL-W-81381 wire with MIL-W-22759 wire; continued update of TAV-8B trainer aircraft to better align with operational aircraft; continued incorporation of OSCAR; completion of the aircraft arming unit with ZRF; and incorporation of AV-8B F402-RR-408 Engine safety and operational changes.</p> <p>The AV-8B active inventory (30 April 2002) consists of 4 major configurations:                      17 two-seat TAV-8B aircraft,                      20 DAY Attack aircraft,                      41 NIGHT Attack Aircraft, and                      94 Night Attack/RADAR aircraft.</p> <p>In addition, there are 2 undelivered aircraft that are in the Remanufacture process. The production (Remanufacture) program will deliver the last aircraft in Sep 03. Retrofit quantities of each ECP depend on the aircraft configuration type if &amp; when the change was introduced into production.</p>												
(TOA, \$ in Millions)												
OSIP No.	Description	Prior Years		FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	To Complete	Total
1-91	Omnibus O&S Improvements	87.3		4.9	1.5	1.2						95.0
34-93	Horizontal Stabilator Fatigue Impr.	19.3		0.9								20.2
3-96	KAPTON Wire Replacement	30.7		2.9	1.3	1.1						36.0
25-99	TAV-8B Performance Upgrade	100.1		2.2	1.9	2.0						106.2
23-00	Litening II Pod	120.7		28.0	37.0							185.7
12-02	Open Systems Core Avionics Requirement & Precision Strike	17.5		18.2	9.7	11.3	24.1	12.4	13.2	10.2	8.4	125.0
06-03	Zero Retention Force			1.5	1.4							2.9
02-04	Engine Life Management Program				4.5	5.2	3.2	3.9	2.8	4.0	8.2	31.8
XX-06	Obsolescence Replacement						1.3	0.3	0.3	2.4	29.8	34.1
<b>TOTAL</b>		<b>375.5</b>		<b>58.6</b>	<b>57.4</b>	<b>20.8</b>	<b>28.7</b>	<b>16.6</b>	<b>16.3</b>	<b>16.6</b>	<b>46.3</b>	<b>636.8</b>
<p>* \$1.2M was identified in prior years to forward finance future requirements and the corresponding adjustment was made in FY 2005.                      Note: Totals may not add due to rounding.</p>												

**Exhibit P-3a** **INDIVIDUAL MODIFICATION**

MODIFICATION TITLE: OMNIBUS Operational & Safety Improvements (OSIP 1-91)

MODELS OF SYSTEM AFFECTED: TAV-8B, AV-8B Day, AV-8B Night, AV-8B Night/Radar TYPE MODIFICATION: Safety

**DESCRIPTION/JUSTIFICATION:**

Each ECP description includes the AV-8B configuration affected by the change and, if applicable, when it was introduced into production.  
**ECP-217**, Emergency Battery Backup provides electrical power to the landing gear in the event of a major power failure - TAV-8B, Day. **ECP-246**, Canopy Restraint incorporates an improved pyrotechnic device to provide separation to the pilot on ejection - TAV-8B. **ECP-248**, Power Lever Angle Unit (PLAU) provides critical in-flight engine control, is being relocated from the engine bay to the cockpit to reduce the failure rate - TAV-8B, Day, Night, and FY99 & prior Radar. **ECP-251**, Nose Wheel Steering (NWS), a Safety change, provides improved pilot control over nose wheel steering responsiveness for critical landing conditions - TAV-8B, Night, FY96 & prior Radar. **ECP-254**, Inlet Guide Vane Controller (IGVC), a Safety change, provides improved -408 engine (via **RR-ECP-3759**) responsiveness during critical maneuvers - TAV-8B, Night, FY96 & prior Radar. **ECP-255R1**, Digital Flap Controller (DFC), a Safety change, provides improved flap control range and failure response during critical operations - TAV-8B, Day, Night, FY97 & prior Radar. **ECP-256**, Jet Pipe Temperature (JPT), a Safety change, eliminates the erroneous engine temperature returns - TAV-8B, Night, and FY96 & prior Radar. **ECP-257**, Digital Electronic Controller Unit (DECU), a Safety Change provides an improved power supply that corrects power interruptions during critical maneuvers - TAV-8B, Night, and FY96 & prior Radar. **ECP-269R1**, Frame 12, incorporates high vibration structural modifications to absorb increased vibrations which cause fatigue cracks - TAV-8B, Night & Radar. **ECP-271**, An improved mounting bracket for the 100% LERX structure reduces maintenance problems and improves readiness - Night, FY96 & prior Radar. **ECP-278**, installs more durable cables for the Radar Warning Radar system - Night, Radar.

**DEVELOPMENT STATUS/MAJOR DEVELOPMENT MILESTONES:**

NWS flight test completed Feb 98. NWS & IGVC V&V completed third quarter FY-98. DFC and JPT V&V completed second quarter FY-98. DECU V&V completed first quarter FY-98 and incorporation initiated. Initial design/V&V of ECP-217 was completed in 2nd quarter FY-90 and a replacement battery was identified in 3rd quarter FY-97 to allow final installations. ECP-271 design/V&V was completed 3rd quarter FY-99. Installation reinitiated to complete modification program. ECP-278 design completed in 2nd quarter FY-99. L660 GTS/APU design was completed 2nd quarter FY-97 and rework initiated in 3rd quarter FY-97. L580 GTS/APU modification rework was completed in 4th quarter FY-97. GEC-11 modification was completed 4th quarter FY-97.

**FINANCIAL PLAN (TOA, \$ in Millions):**

	Prior Years		FY 2003		FY 2004		FY 2005		FY 2006		FY 2007		FY 2008		FY 2009		To Complete		TOTAL		
	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	
<b>RDT&amp;E</b>																					
<b>PROCUREMENT</b>																					
Installation Kits																					
ECP-217 (Emerg Battery) Kit	67	1.2																			
ECP-246 (TAV Canopy Restraint) Kit	34	0.7																			
ECP-248 (PLAU Resolver) Kit	54	2.8																			
ECP-251 (NWS) Kit	94	3.2																			
ECP-254 (IGVC) Kit	92	0.2																			
ECP-255R1 (DFC) Kit	141	0.3																			
ECP-256 (JPT) Kit	192	0.1																			
ECP-257 (DECU) Kit	99	0.0																			
ECP-269R1 (Frame 12) Kit	60	0.7																			
ECP-271 (100%LERX) Kit	53	0.2																			
ECP-278 (RWR Cable) Kit	136	0.8																			
ECP-300 Landing Gear Control Handle	184	0.8																			
G10 DSM Modules Kit	154	1.2																			
GEC-11 (CEDE Unit) Kit	181	0.1																			
GEC-002 (HPMA Unit) Kit	43	2.8																			
L580 (GTS/APU Duct) Kit		0.0																			
L660 (GTS/APU Protect Unit) Kit	329	0.9																			
PRIOR YEARS	528	8.3																			
Installation Kits N/R		7.8																			
Installation Equipment																					
ECP-248 (PLAU) Equip	54	0.1																			
ECP-255R1 (DFC) Equip	161	5.4																			
ECP-254/RR-3759 (IGVC) Equip	125	17.1	6	1.0																	
ECP-296 (ALR-67 Antennas)	178	0.8																			
Installation Equipment N/R																					
Engineering Change Orders																					
Data		2.0																			
Training Equipment		7.8																			
Support Equipment		2.3																			
ILS		0.3																			
Other Support		10.1		1.2		0.1															
Interim Contractor Support																					
Installation Cost		9.1		2.7		1.4		1.2													
<b>TOTAL PROCUREMENT</b>		<b>87.3</b>		<b>4.9</b>		<b>1.5</b>		<b>1.2</b>													

- Totals do not add due to rounding
- Asterisk indicates amount less than 50K

Exhibit P-3a

**Exhibit P-3a**

MODELS OF SYSTEMS AFFECTED: TAV-8B, AV-8B Day, AV-8B Night, AV-8B Night/Radar MODIFICATION TITLE: Operational & Safety Improvement Modifications (01-91)

INSTALLATION INFORMATION: This reflects multiple ECP installations begun in FY-94. Quantities will not match Kit Procurement line due to "O" Level Installs, Contractor Warranty Kits (ECP-271 & ECP-269R1) & piece part attrition upgrades.

METHOD OF IMPLEMENTATION: Installation will be accomplished by Naval Aviation Depot drive in modification.

ADMINISTRATIVE LEADTIME: It varies with each ECP Months PRODUCTION LEADTIME: It varies with each ECP Months

CONTRACT DATES: FY 2003 Multiple FY 2004 Multiple FY 2005 Multiple

DELIVERY DATE: FY 2003 Multiple FY 2004 Multiple FY 2005 Multiple

(\$ in Millions)

Cost:	Prior Years		FY 2003		FY 2004		FY 2005		FY 2006		FY 2007		FY2008		FY 2009		To Complete		TOTAL	
	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$
FY 2002 & PY ( 1421 ) kits	1100	9.1	178	2.7	98	1.4	45	1.2												
FY 2003 ( 6 ) kits							6	*												
FY 2004 ( ) kits																				
FY 2005 ( ) kits																				
FY 2006 ( ) kits																				
FY 2007 ( ) kits																				
FY 2008 ( ) kits																				
FY 2009 ( ) kits																				
To Complete ( ) kits																				
<b>TOTAL</b>	1100	9.1	178	2.7	98	1.4	51	1.2												

Installation Schedule

	FY 2002 & Prior	FY 2003				FY 2004				FY 2005				FY 2006						
		1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4			
In	1100	44	45	44	45	24	25	24	25	13	13	13	12							
Out	1100	44	45	44	45	24	25	24	25	13	13	13	12							

	FY 2007				FY2008				FY 2009				To Complete	TOTAL	
	1	2	3	4	1	2	3	4	1	2	3	4			
In															
Out															

Exhibit P-3a		INDIVIDUAL MODIFICATION																			
MODIFICATION TITLE:		Horizontal Stabilator Fatigue Improvements (OSIP 34-93)																			
MODELS OF SYSTEM AFFECTED:		TAV-8B, AV-8B Day, AV-8B Night, AV-8B Night/Radar									TYPE MODIFICATION:									Structural	
DESCRIPTION/JUSTIFICATION:																					
<p>Between November 1992 and February 1993 T/AV-8B operators reported 35 incidents of cracking in stabilator center section aluminum alloy ribs and spars. McDonnell Douglas Aerospace Corp. (MDA) has defined a new stabilator center section that changes the structural material to titanium alloy, provides selective material gage increases and changes stabilator pivot fittings from titanium alloy to steel. These changes were incorporated in FY 1991 production aircraft Cum 241 and subsequent. This OSIP provides for the design, test and procurement of an ECP-243R1 airframe change kit for retrofit of the new stabilator center section in all 223 in-service T/AV-8B aircraft and installation into all spare stabilators.</p>																					
DEVELOPMENT STATUS/MAJOR DEVELOPMENT MILESTONES:																					
<p>Development is not required. Basic engineering and design are complete. Contractor laboratory testing and Contractor/Navy flight testing of the modified stabilator was completed in September 1994. Validation and verification of a production representative aircraft change kit and technical directive by the NADEP was completed in May 1993.</p>																					
FINANCIAL PLAN (TOA, \$ in Millions):																					
	Prior Years		FY 2003		FY 2004		FY 2005		FY 2006		FY 2007		FY 2008		FY 2009		To Complete		TOTAL		
	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	
RDT&E																					
PROCUREMENT																					
Installation Kits																					
ECP-243R1 (Horiz Stab) Kit	222	12.3																			
Installation Kits N/R																					
Installation Equipment																					
ECP-243R1 (Horiz Stab) Equip																					
Installation Equipment N/R																					
Engineering Change Orders																					
Data		*																			
Training Equipment																					
Support Equipment																					
ILS																					
Other Support		0.2																			
Interim Contractor Support																					
Installation Cost	237	6.8	12	0.9																	
<b>TOTAL PROCUREMENT</b>		<b>19.3</b>		<b>0.9</b>																	
Notes:																					
1. Totals do not add due to rounding																					
2. Asterisk indicates amount less than 50K																					

Exhibit P-3a

Exhibit P-3a

MODELS OF SYSTEMS AFFECTED: TAV-8B, AV-8B Day, AV-8B Night, AV-8B Night/Radar MODIFICATION TITLE: HORIZONTAL STABILATOR FATIGUE IMPROVEMENTS (OSIP 34-93)

INSTALLATION INFORMATION:

METHOD OF IMPLEMENTATION: The first kit was provided at no cost to the government. The installation is being accomplished by Navy Drive-in Modification.

ADMINISTRATIVE LEADTIME: 3 Months PRODUCTION LEADTIME: 8 Months

CONTRACT DATES: FY 2003 \_\_\_\_\_ FY 2004 \_\_\_\_\_ FY 2005 \_\_\_\_\_

DELIVERY DATE: FY 2003 \_\_\_\_\_ FY 2004 \_\_\_\_\_ FY 2005 \_\_\_\_\_

(\$ in Millions)

Cost:	Prior Years		FY 2003		FY 2004		FY 2005		FY 2006		FY 2007		FY 2008		FY 2009		To Complete		TOTAL		
	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	
FY 2002 & PY (249) kits	237	6.8	12	0.9																	
FY 2003 ( ) kits																					
FY 2004 ( ) kits																					
FY 2005 ( ) kits																					
FY 2006 ( ) kits																					
FY 2007 ( ) kits																					
FY 2008 ( ) kits																					
FY 2009 ( ) kits																					
To Complete ( ) kits																					
<b>TOTAL</b>	237	6.8	12	0.9																	

\*\*NOTE: Installation includes 27 spare stabilators.

Installation Schedule

FY 2002 & Prior	FY 2003				FY 2004				FY 2005				FY 2006			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
In	3	3	3	3												
Out	237	3	3	3	3											

	FY 2007				FY 2008				FY 2009				To Complete	TOTAL
	1	2	3	4	1	2	3	4	1	2	3	4		
In														
Out														

**Exhibit P-3a** **INDIVIDUAL MODIFICATION**

MODIFICATION TITLE: KAPTON Wire Replacement (OSIP 3-96)

MODELS OF SYSTEM AFFECTED: TAV-8B TYPE MODIFICATION: Safety

DESCRIPTION/JUSTIFICATION:  
 The Kapton Wiring Replacement (ECP-277) S,R&M modification is required to replace the MIL-W-81381 (KAPTON) wiring with MIL-W-22759 (TEFZEL) wiring in TAV-8B aircraft delivered prior to September 1989. TAV-8B's with KAPTON (MIL- W-81381) insulated wire suffer from high failure rate due to frequent incidents of chafing resulting in wire fires. The KAPTON (MIL-W-81381) wired airplanes also require frequent and costly maintenance actions to continue flying. Replacement of this wiring is expected to improve aircraft readiness. This modification was introduced in production in FY 1989 TAV-8B aircraft cum 16 & subsequent which deleted the KAPTON (MIL-W-81341) insulated wiring and replaced it with irradiated TEFZEL wiring which is much more resistant to chafe and fire. This modification will be retrofitted in 12 of the 13 TAV-8B aircraft (cum 15 & below) currently in the inventory.

DEVELOPMENT STATUS/MAJOR DEVELOPMENT MILESTONES:  
 This modification was designed and incorporated in all production baseline aircraft delivered after September 1989. AFP not applicable. An installation validation commenced July 2000 and completed Aug 2001.

FINANCIAL PLAN (TOA, \$ in Millions):

	Prior Years		FY 2003		FY 2004		FY 2005		FY 2006		FY 2007		FY 2008		FY 2009		To Complete		TOTAL		
	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	
RDT&E																					
PROCUREMENT																					
Installation Kits																					
ECP 277 (Kapton Wire) Kit	12	16.3																			
Installation Kits N/R		2.2																			
Installation Equipment																					
ECP 277 (Kapton Wire) Equip																					
Installation Equipment N/R		0.8																			
Engineering Change Orders																					
Data		1.0																			
Training Equipment																					
Support Equipment																					
ILS		*																			
Other Support		1.6																			
Interim Contractor Support																					
Installation Cost	6	8.9	2	2.9	2	1.3	1	1.1													
<b>TOTAL PROCUREMENT</b>		<b>30.7</b>		<b>2.9</b>		<b>1.3</b>		<b>1.1</b>													

- Notes:
1. Totals do not add due to rounding
  2. Asterisk indicates amount less than 50K

**Exhibit P-3a**

MODELS OF SYSTEMS AFFECTED:

TAV-8B

MODIFICATION TITLE: KAPTAN Wire Replacement (OSIP 3-96)

INSTALLATION INFORMATION:

METHOD OF IMPLEMENTATION:

AFC installation will be accomplished by Naval Aviation Depot Drive-in Mod.

ADMINISTRATIVE LEADTIME:

5 Months

PRODUCTION LEADTIME:

12 Months

CONTRACT DATES:

FY 2003 \_\_\_\_\_

FY 2004 \_\_\_\_\_

FY 2005 \_\_\_\_\_

DELIVERY DATE:

FY 2003 \_\_\_\_\_

FY 2004 \_\_\_\_\_

FY 2005 \_\_\_\_\_

(\$ in Millions)

Cost:	Prior Years		FY 2003		FY 2004		FY 2005		FY 2006		FY 2007		FY 2008		FY 2009		To Complete		TOTAL		
	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	
FY 2002 & PY (12) kits *	6	8.9	2	2.9	2	1.3	1	1.1													
FY 2003 ( ) kits																					
FY 2004 ( ) kits																					
FY 2005 ( ) kits																					
FY 2006 ( ) kits																					
FY 2007 ( ) kits																					
FY 2008 ( ) kits																					
FY 2009 ( ) kits																					
To Complete ( ) kits																					
<b>TOTAL</b>	<b>6</b>	<b>8.9</b>	<b>2</b>	<b>2.9</b>	<b>2</b>	<b>1.3</b>	<b>1</b>	<b>1.1</b>													

\* Only 11 of the 12 kits bought will be installed.

Installation Schedule

	FY 2002 & Prior	FY 2003				FY 2004				FY 2005				FY 2006							
		1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4				
In	6	1	1			1	1			1											
Out	6	1	1			1	1			1											

	FY 2007				FY 2008				FY 2009				To Complete	TOTAL	
	1	2	3	4	1	2	3	4	1	2	3	4			
In															
Out															

**Exhibit P-3a** **INDIVIDUAL MODIFICATION**

MODIFICATION TITLE: TAV-8B Performance Upgrade (OSIP 25-99)

MODELS OF SYSTEM AFFECTED: TAV-8B TYPE MODIFICATION: Upgrade

DESCRIPTION/JUSTIFICATION:  
 Update all AV-8B Trainer aircraft to better align with operational aircraft by incorporating Night Vision Goggle (NVG) lighting and the -408 engine. ECP-276 (NVG lighting) incorporation will allow for training of fleet pilots in NVG tactical flight operations during initial AV-8B flight training under the supervision of an instructor pilot. Currently, all NVG training is performed in the operational squadrons in single piloted aircraft after completion of initial pilot training. Early increase in pilot NVG proficiency and safer training environment. Improves configuration standardization with current Night/Radar NVG compatible components. ECP-276 will be installed on 17 aircraft currently in the inventory. The -408 engine is not thrust limited to the extent of the current -406A/B engines. ECP-275 (-408 Engine) provisions incorporation will allow expansion of VSTOL training time and increase the vertical landing performance safety margin by 2,000 pounds of thrust. Additionally, initial pilot training will be at the same performance levels experienced in the operational squadrons. Configuration consistency between Trainer and fleet Night/Radar aircraft will also be enhanced. Trainer aircraft cum T16 and above have -408 provisions incorporated and require engines only. Trainer aircraft cum T1 through T15 require both -408 engine provision kits and -408 engines. ECP-275 will be installed on 12 of the 13 T15 & below aircraft currently in the inventory. ECP-288 will field a modified Operational Flight Program to support the full -408A engine capabilities. ECP-291 installs the Night Attack Display computer. ECP-305 installs the Throttle Grip and Stick. Due to the upgraded engine, Frame 12 stiffeners will be installed on all TAV-8B aircraft concurrently with ECP-275.

DEVELOPMENT STATUS/MAJOR DEVELOPMENT MILESTONES:  
 Initial design of the NVG and -408A aircraft kits began in November 1998. Engine provisioning software development (ECP-288) was initiated in November 1998.

FINANCIAL PLAN (TOA, \$ in Millions):

	Prior Years		FY 2003		FY 2004		FY 2005		FY 2006		FY 2007		FY 2008		FY 2009		To Complete		TOTAL		
	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	
RDT&E																					
PROCUREMENT																					
Installation Kits																					
ECP-275, -408 Engine Kit (T2-15)	12	4.2																			
IAFC-398, Fr.12 Kit (T2-15)	12	0.3																			
ECP-276, NVG Ltq. Kit (T2-24)	17	4.3																			
AFC-273, Kit (T2-24)	20	0.1																			
Installation Kits N/R		2.6																			
Installation Equipment																					
-408 Engines, ECP-275 (T2-15)	12	41.7																			
-408 Engines, ECP-275 (T16-24)	6	20.4																			
Engine Monitoring Unit, ECP-275	20	1.2																			
Stby. Altimeter, ECP-276 (T2-24)	36	0.5																			
Eng. Perf. Ind. (EPI), ECP-276 (T2-24)	42	0.3																			
CDC/CDM, ECP-276 (T2-24)	51	1.0																			
ACNIP, ECP-276 (T2-24)	18	0.2																			
Fuel Qty Ind., ECP-276 (T2-24)	26	0.1																			
Airspeed Ind., ECP-276 (T2-24)	52	0.1																			
ECP-288 Mission Computer (T2-24)	16	2.0																			
ECP-288 Warfare Mgmt Computer	17	3.7																			
ECP-291 NA Disp Computers (T2-24)	17	1.7																			
ECP-291 Throttle Grip & Stick(T2-24)																					
Installation Equipment N/R		0.2																			
Engineering Change Orders																					
Data		2.2		*																	
Training Equipment		0.2																			
Support Equipment		0.2																			
ILS							0.1														
Other Support		9.4		*																	
Interim Contractor Support																					
Installation Cost	19	3.5	16	2.1	12	1.9	7	1.9													
<b>TOTAL PROCUREMENT</b>		<b>100.1</b>		<b>2.2</b>		<b>1.9</b>		<b>2.0</b>													

Notes:  
 1. Totals do not add due to rounding  
 2. Asterisk indicates amount less than 50K

**Exhibit P-3a**

MODELS OF SYSTEMS AFFECTED: TAV-8B MODIFICATION TITLE: TAV-8B Performance Upgrade (OSIP 25-99)

INSTALLATION INFORMATION:

METHOD OF IMPLEMENTATION: AFC installation will be accomplished by Naval Aviation Depot Drive-in Mod. ECP-275 will be installed concurrent with ECP-276 on aircraft cum T-15 & below.

ADMINISTRATIVE LEADTIME: Varies for each ECP PRODUCTION LEADTIME: Varies for each ECP

CONTRACT DATES: FY 2003 \_\_\_\_\_ FY 2004 \_\_\_\_\_ FY 2005 \_\_\_\_\_

DELIVERY DATE: FY 2003 \_\_\_\_\_ FY 2004 \_\_\_\_\_ FY 2005 \_\_\_\_\_

(\$ in Millions)

Cost:	Prior Years		FY 2003		FY 2004		FY 2005		FY 2006		FY 2007		FY 2008		FY 2009		To Complete		TOTAL		
	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	
FY 2002 & PY (61) kits*	19	3.5	16	2.1	12	1.9	7	1.9													
FY 2003 ( ) kits																					
FY 2004 ( ) kits																					
FY 2005 ( ) kits																					
FY 2006 ( ) kits																					
FY 2007 ( ) kits																					
FY 2008 ( ) kits																					
FY 2009 ( ) kits																					
To Complete ( ) kits																					
<b>TOTAL</b>	19	3.5	16	2.1	12	1.9	7	1.9													

\* Only 54 of the 61 kits bought will be installed.

Installation Schedule

FY 2002 & Prior	FY 2003				FY 2004				FY 2005				FY 2006			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
In	19	4	4	4	4	3	3	3	3	3	2	2				
Out	19	4	4	4	4	3	3	3	3	3	2	2				

	FY 2007				FY 2008				FY 2009				To Complete	TOTAL
	1	2	3	4	1	2	3	4	1	2	3	4		
In														
Out														

<b>Exhibit P-3a</b>		<b>INDIVIDUAL MODIFICATION</b>																		
MODIFICATION TITLE: <u>LITENING II Pod (23-00)</u>																				
MODELS OF SYSTEM AFFECTED: _____										TYPE MODIFICATION: <u>Upgrade</u>										
DESCRIPTION/JUSTIFICATION:																				
<p>The system will integrate and procure an external targeting pod that includes an Infrared (IR) and low-light TV targeting device capable of detecting, classifying, auto-tracking, and designating air-to-surface targets. The system will support first-pass autonomous delivery of conventional, precision guided, and accurate munitions to include Laser Maverick, GBU-12 and GBU-16. The system will provide targeting capabilities for the AV-8B fleet of Night Attack and Radar/Night attack aircraft through the end of it's service life. The addition of the LITENING II Targeting Pod gives the AV-8B (Night and Radar) the capability to perform precision targeting. Congressional adds of FY01 \$80M, FY02 \$24.7M , FY03 \$28.0M and FY04 \$37.0M to procure additional Litening II Precision Targeting Pods and integrate Litening into the AV-8B.</p>																				
DEVELOPMENT STATUS/MAJOR DEVELOPMENT MILESTONES:																				
<p>The Targeting Pod is a non developmental item and has been in full production for several years. It was a winner of a targeting FLIR competition for the Air Force Reserve and Air National Guard and put in service on their F-16s 2nd Qtr FY-00. The design, integration, and testing of the Targeting Pod for the AV-8B was done on the Radar and/or Night Attack during 3rd Qtr FY-00. The integration will utilize: existing aircraft software, a weapons station adapter, and Targeting Pod interface software. PEO(A) had approved the acquisition strategy to acquire the pods through an existing USAF contract and provided a targeting pod capability to the Fleet in 1st Qtr FY-02. Full Litening integration to utilize targeting information from the Litening Pod in OC1.2 to create aircraft targeting solutions will be developed and tested under this OSIP and introduced under the H20 OFP program.</p>																				
FINANCIAL PLAN (TOA, \$ in Millions):																				
	Prior Years		FY 2003		FY 2004		FY 2005		FY 2006		FY 2007		FY 2008		FY 2009		To Complete		TOTAL	
	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$
RDT&E																				
PROCUREMENT																				
Installation Kits, ECP Pod Provisions	138	0.3																		
POD Retrofit Kits																				
256 TO 512 AT Configuration			47	3.9																
512 ER TO 512 AT Configuration					9	3.0														
Installation Kits N/R		1.2																		
Installation Equipment, Pods																				
256	9	9.0																		
512 ER	47	61.1																		
512 AT	10	13.0	10	12.3	20	23.8														
CFE WRA SETS		2.6																		
Installation Equipment N/R		6.7																		
Engineering Change Orders		0.1																		
Data		0.4		0.2																
Training Equipment		3.5		0.1																
Support Equipment	10	1.3		0.1	20	0.2														
ILS		0.1																		
Other Support		21.4		11.4		10.0														
Interim Contractor Support																				
Installation Cost																				
<b>TOTAL PROCUREMENT</b>		<b>120.7</b>		<b>28.0</b>		<b>37.0</b>														
Notes:																				
1. Totals do not add due to rounding																				
2. Asterisk indicates amount less than 50K																				

**Exhibit P-3a** **INDIVIDUAL MODIFICATION**

MODIFICATION TITLE: Open Systems Core Avionics Requirement (OSCAR) and Precision Strike (12-02)

MODELS OF SYSTEM AFFECTED: AV-8B Night, AV-8B Night/Radar TYPE MODIFICATION: Upgrade

**DESCRIPTION/JUSTIFICATION:**

The current AV-8B avionics do not have sufficient processor throughput and memory to support planned system upgrades. The OSCAR program will update the existing, obsolete avionics using Commercial Off the Shelf (COTS) open system architecture hardware that runs object-oriented design (OOD) and higher order language (HOL) software. This OSIP supports the procurement and retrofit installation of the Mission System Computer (MSC) and Warfare Management Computer (WMC) being developed under the OSCAR program. This OSIP also supports the procurement and retrofit installation of MIL-STD-1760 wiring. Installation of the MIL-STD-1760B wiring to support new weapons will require the addition of wiring to the fuselage, additional circuit breaks, and a new relay panel. Modifications to the wing and pylon wiring are also part of this modification. Subsequent system upgrades based on the OSCAR system will be a continuing effort to integrate precision weapons suitable for delivery from the Harrier platform, as well as the internal and pod mounted systems necessary to effect guidance and designation are essential to the continued relevance of the AV-8B to the war fighter. ECP-289 ECCM Mod Kit will be installed concurrent with OSCAR to provide the full integration of the Havequick/SINGARS capability.

**DEVELOPMENT STATUS/MAJOR DEVELOPMENT MILESTONES:**

This system upgrade (ECP 270R2, ECP 285) is the production incorporation of the MSC, WMC and software being developed under the OSCAR program. The OSCAR program involves development, integration and operational test of the new MSC, WMC, and Operational Flight Program software that will use the MK-83 Joint Direct Attack Munitions on the AV-8B as well as full integration of Havequick/SINGARS. LRIP I decision was approved Feb 02. DT completed 4th quarter FY02. LRIP II decision was approved Apr 03. OPEVAL for OSCAR is scheduled for completion 2nd qtr 04. Initial operating capability is scheduled for Jan 05.

**FINANCIAL PLAN (TOA, \$ in Millions):**

	Prior Years		FY 2003		FY 2004		FY 2005		FY 2006		FY 2007		FY 2008		FY 2009		To Complete		TOTAL		
	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	
RDT&E ELEMENT# 0604264N																					
<b>PROCUREMENT</b>																					
Installation Kits																					
MIL-STD-1760 Wiring Kits			10	2.3	6	1.5	15	3.3													
Installation Kits N/R																					
Installation Equipment																					
OSCAR Computers	52	8.9	48	9.6	24	6.0	22	5.4													
Installation Equipment N/R		3.3																			
Engineering Change Orders																					
Data		0.7		0.7		0.3		0.1													
Training Equipment		1.5		4.0		1.0															
Support Equipment		0.2		0.3																	
ILS																					
Other Support		2.8		1.3		0.4		0.4													
Interim Contractor Support																					
Installation Cost					30	0.5	37	2.1													
<b>TOTAL PROCUREMENT</b>		17.5		18.2		9.7		11.3													

Notes: ECP-289 ECCM Mod Kits will be installed concurrent with OSCAR and installation costs will be incurred under OSIP 1202 Open Systems Core Avionics Requirement & Precision Strike

1. Totals do not add due to rounding
2. Asterisk indicates amount less than 50K

Exhibit P-3a

**Exhibit P-3a**

MODELS OF SYSTEMS AFFECTED:

AV-8B Night, AV-8B Night/Radar

MODIFICATION TITLE: Open Systems Core Avionics Requirement (OSCAR) and Precision Strike (12-02)

INSTALLATION INFORMATION:

METHOD OF IMPLEMENTATION:

AFC installation will be accomplished by Naval Aviation Depot Drive-in Mod.

ADMINISTRATIVE LEADTIME:

9 Months

PRODUCTION LEADTIME:

17 Months

CONTRACT DATES:

FY 2003 Jul-03

FY 2004 May-04

FY 2005 Nov-04

DELIVERY DATE:

FY 2003 Dec-04

FY 2004 Oct-05

FY 2005 Apr-06

(\$ in Millions)

Cost:	Prior Years		FY 2003		FY 2004		FY 2005		FY 2006		FY 2007		FY 2008		2009		To Complete		TOTAL		
	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	
FY 2002 & PY (134 ) kits					30	0.5	27	0.4													
FY 2003 (10) kits							10	1.6													
FY 2004 (6) kits																					
FY 2005 (15) kits																					
FY 2006 ( ) kits																					
FY 2007 ( ) kits																					
FY 2008 ( ) kits																					
FY 2009 ( ) kits																					
To Complete ( ) kits																					
<b>TOTAL</b>					30	0.5	37	2.1													

FY02 buys of ECP-289 ECCM mod kits were procured in OSIP 2392, installation will be concurrent with OSCAR

Installation Schedule

FY 2002 & Prior	FY 2003				FY 2004				FY 2005				FY 2006			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
In							15	15	8	10	10	9				
Out							15	15	8	10	10	9				

	FY 2007				FY 2008				FY 2009				To Complete	TOTAL
	1	2	3	4	1	2	3	4	1	2	3	4		
In														
Out														

Exhibit P-3a		INDIVIDUAL MODIFICATION																			
MODIFICATION TITLE: <u>Zero Retention Force (06-03)</u>																					
MODELS OF SYSTEM AFFECTED: <u>All T/AV-8B Aircraft (TAV-8B, AV-8B Night, AV-8B Radar).</u>											TYPE MODIFICATION: <u>Safety</u>										
DESCRIPTION/JUSTIFICATION: The purpose of the arming unit is to control the retention or release of an arming wire attached to the weapon. The ZRF enables reliability of flight selection of firing and weapon mode operations. The current BRU-36 arming unit (AU) has a history of problems and is not up to the standards of the AU's used on newer airframes. The Zero Retention Force Solenoid will be interchangeable with the SA-122 on all AV-8B models to provide reliable and dependable operation for in-flight selectability safe ordinance jettison.																					
DEVELOPMENT STATUS/MAJOR DEVELOPMENT MILESTONES: Developmental Test complete Mar 03.																					
FINANCIAL PLAN (TOA, \$ in Millions):																					
	Prior Years		FY 2003		FY 2004		FY 2005		FY 2006		FY 2007		FY 2008		FY 2009		To Complete		TOTAL		
	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	
RDT&E ELEMENT# 0604214N																					
PROCUREMENT																					
Installation Kits																					
Installation Kits N/R																					
Installation Equipment			65	1.5	65	1.4															
Installation Equipment N/R																					
Engineering Change Orders																					
Data																					
Training Equipment																					
Support Equipment																					
ILS																					
Other Support																					
Interim Contractor Support																					
Installation Cost																					
<b>TOTAL PROCUREMENT</b>				<b>1.5</b>		<b>1.4</b>															
Notes: 1. Totals do not add due to rounding 2. Asterisk indicates amount less than 50K																					

Exhibit P-3a

Individual Modification

MODIFICATION TITLE: Engine Life Management Program (OSIP 02-04)

MODELS OF SYSTEMS AFFECTED: F402-RR-408 TYPE MODIFICATION: Safety

**DESCRIPTION/JUSTIFICATION:**

The AV-8B is a single engine aircraft with unique capabilities. The VSTOL environment is very unforgiving and allows no tolerance for engine problems. In the past, the Pegasus F402 has suffered from a less than optimal safety and reliability record demonstrating a 12.11 mishap (Class A) per 100,000 flight hours compared to a historical average rate of less than 2.0 over the rest of the Navy and Marine Corps in recent years. The Engine Life Management Program is a comprehensive program to increase safety of flight and operational readiness of the AV-8B F402-RR-408 Engine. Funding provided is to incorporate Engineering Change Proposals to increase safety of flight and operational readiness of the F402-RR-408 Engine.

**DEVELOPMENT STATUS/MAJOR DEVELOPMENT MILESTONES:**

The Engine Life Management Program was developed in October 2000. The purpose of the program is to increase safety of flight and operational readiness of the AV-8B F402-RR-408 Engine. The ELMP is comprised of several Engineering Project Description investigations and a series of bi-annual Accelerated Simulated Mission Endurance Tests (ASMET). The Engineering Project Description (EPD) investigations and ASMET tests provide data points for existing Fleet problems and predict future engineering issues with the F402-RR-408. The EPD investigations are conducted annually and an ASMET test is scheduled to begin 2Q/04 and complete 4Q/04. Engineering Change Proposals resulting from Engineering Investigations and ASMET terdown results will be researched and thier development formalized under the development program and incorporated into the F402-RR-408 via OSIP 02-04.

**FINANCIAL PLAN: (TOA, \$ in Millions)**

	Prior Years		FY 2003		FY 2004		FY 2005		FY 2006		FY 2007		FY 2008		FY2009		To Complete		Total		
	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	
RD&E																					
PROCUREMENT																					
Installation Kits																					
ECP EPD Kit					58	3.0	33	1.7													
ECP ASMET04 Kit							138	2.6													
ECP ASMET06 Kit																					
ECP 3763																					
Various ECP																					
Installation Kits N/R																					
Installation Equipment																					
XXX Equip																					
Installation Equipment N/R																					
Engineering Change Orders																					
XXX Kit ECO XXX																					
XXX Equip ECO XXX																					
Data																					
Training Equipment																					
Support Equipment																					
ILS																					
Other Support						1.5		0.9													
Interim Contractor Support																					
Installation Cost																					
<b>Total Procurement</b>						<b>4.5</b>		<b>5.2</b>													

Notes:

1. Totals may not add due to rounding
2. Retrofit to be accomplished via attrition and O-Level Installation

<b>Exhibit P-40, BUDGET ITEM JUSTIFICATION</b>	DATE: <b>February 2004</b>
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APPROPRIATION/BUDGET ACTIVITY <b>Aircraft Procurement, Navy/APN-5 Aircraft Modifications</b>	P-1 ITEM NOMENCLATURE <b>F-14 Series Modifications</b>
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Program Element for Code B Items:	Other Related Program Elements
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	Prior Years	ID Code	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	To Complete	Total
QTY		A									0
COST (In Millions)	<b>361.6</b>	A	<b>5.3</b>	<b>0.0</b>	<b>366.9</b>						

This line item funds modifications to the F-14 aircraft. The F-14 is a twin-engine, two seat, variable sweep, supersonic strike fighter capable of engaging multiple targets simultaneously at altitudes from sea level to 80,000 feet. The specific modifications budgeted and programmed are:

(TOA, \$ in Millions)

OSIP No.	Description	Prior Years	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	To Complete	Total
152-83	Structural Improvements	361.6	5.3								366.9
<b>Total</b>		<b>361.6</b>	<b>5.259</b>								<b>366.9</b>

**Note: Totals may not add due to rounding.**

Individual Modification

Exhibit P-3a

MODIFICATION TITLE: Structural Improvements (OSIP 152-83)

MODELS OF SYSTEMS AFFECTED: F-14A/B/D TYPE MODIFICATION: Structural Life Extension/Safety/Reliability

DESCRIPTION/JUSTIFICATION: A full scale test on F-14 "Aircraft 98" mounted test rig at Grumman, Bethpage was concluded in 1995. The goal of the fatigue test was 18,000 hours, approximately equivalent to 9,000 hours flight time. A total of 17,349 test hours were completed. The point at which structural Engineering Change Proposals (ECPs) are initiated depends upon the type of failure discovered in testing and its location in the aircraft structure. When a critical load path involving safety is compromised, a determination is made as to how many flight hours can be flown before aircraft become structurally unsafe to fly. Various fatigue analysis models, plus "Aircraft 98" Test Data, determine the point at which flying must stop and repairs be performed in order to reach or extend the aircraft fatigue life. All modifications are based on the results of such tests. The primary structural improvements in the OSIP are at 5,000, 7,000, and 9,000 hour Time Compliance Requirements (TCRs). This OSIP also includes follow-on outer wing panel fatigue testing, wire fatigue testing, and several other airframe modifications: FS 353 Frame Replacement, Back-up Flight Control, TF-30 Breather Pressure, PHOENIX Fairing Latches, 2 Outer Wing Panel Leading Edge Repairs, Remanufacture F-14B(KB, KM) and F-14D(r) Door reconfiguration, as well as associated NRE for which kits will be bought in OSIP 20-96. Outer Wing Panel Testing at 8316 hours of testing has identified a new crack in the front spar web at Slat Station #2, which also dictates the added requirement for partial 9K kits procured in FY00.

DEVELOPMENT STATUS/MAJOR DEVELOPMENT MILESTONES: Northrop-Grumman Aerospace Corporation completed fatigue tests to provide failure data. The ECP's procured under OSIP 152-83 are to support those aircraft that require various TCRs. 5,000 (5K TCR) incorporates ECP-1225 (AFC-776) and ECP-1227 (AFC-790, AFC-837). 7,000 Hour TCR (7K TCR) is ECP-1243 (AFC-802). 9,000 Hour TCR (9K TCR), ECP-1287 AFC-875, is being designed, tested and procured with AFC in development. The TCR's are also expressed in percent of Fatigue Life Expended (FLE). All F-14's required to sustain inventory requirements will receive 5K TCR's. F-14B's and F-14D's will receive 7K and 9K TCR's. These corrections will be performed concurrently, whenever possible, to minimize installation costs.

FINANCIAL PLAN: (LOA, \$ in Millions)

	Prior Years		FY 2003		FY 2004		FY 2005		FY 2006		FY 2007		FY 2008		FY 2009		To Complete		Total		
	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	
RDT&E																					
PROCUREMENT																					
Installation Kits																					
5K Kits, ECP 1225/1227	333	39.4																			
F-14D 7K Kits, ECP 1243	54	15.4																			
9K Kits, ECP 1287	42	20.3																			
TCR Fuel Cells	50	0.2																			
ECP-305 BUFCOM Part 1 Kits	200	0.1																			
ECP-276 BUFCOM Part 11 Kits	145	0.1																			
AFC-859 Bulk Material, ECP 1285	200	0.2																			
ECP 1285 PT II WING CRACK	200	0.2																			
Wing Crack III	155	0.2																			
ECP-304 F.S. 353 Frame Kits	194	0.6																			
TF-30 Breather Pressure **	305	2.8																			
Phoenix Fairing Kits, ECP Pending	50	0.0																			
Door Reconfiguration	218	0.8																			
Rudder Servo, ECP 279	288	1.0																			
FEMS Engine Diagnostic	20	0.4																			
AFC-737, ECP 147 5K Partial	50	0.2																			
Install Kits NR		42.9																			
Other Prior Year Kits		47.5																			
Installation Equipment																					
Auxiliary Hardware		1.3																			
Installation Equipment N/R		17.5																			
Engineering Change Orders																					
Data		2.1																			
Training Equipment																					
Support Equipment																					
ILS																					
Other Support		21.8		3.6																	
Interim Contractor Support																					
Installation Cost	604	146.7	119	1.7																	
<b>Total Procurement</b>		<b>361.6</b>		<b>5.3</b>																	

- Notes:
1. Totals may not add due to rounding
  2. Asterisk indicates amount less than \$50K
  3. Double asterisk indicates "I" or "O" level Installs which are not funded with APN-5 dollars.



**Exhibit P-3a**

MODELS OF SYSTEMS AFFECTED: F-14A/B/D MODIFICATION TITLE: Structural Improvements (OSIP 152-83) WING CRACK II/III (ECP-1285 PT II)

INSTALLATION INFORMATION:

METHOD OF IMPLEMENTATION: NADEP & commercial depot concurrent with SDLM; NADEP and contractor field mod. team (FMT); drive-in mods. (DIM), organizational and intermediate level installs.

ADMINISTRATIVE LEADTIME: 4 Months PRODUCTION LEADTIME: 3 Months

CONTRACT DATES: FY 2003: \_\_\_\_\_ FY 2004: \_\_\_\_\_ FY 2005: \_\_\_\_\_

DELIVERY DATE: FY 2003: \_\_\_\_\_ FY 2004: \_\_\_\_\_ FY 2005: \_\_\_\_\_

(\$ in Millions)

Cost:	Prior Years		FY 2003		FY 2004		FY 2005		FY 2006		FY 2007		FY 2008		FY 2009		To Complete		TOTAL		
	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	
FY 2002 & PY ( ) kits	236	2.3	119	1.7																	
FY 2003 ( ) kits																					
FY 2004 ( ) kits																					
FY 2005 ( ) kits																					
FY 2006 ( ) kits																					
FY 2007 ( ) kits																					
FY 2008 ( ) kits																					
FY 2009 ( ) kits																					
To Complete ( ) kits																					
<b>TOTAL</b>	<b>236</b>	<b>2.3</b>	<b>119</b>	<b>1.7</b>																	

Installation Schedule

	FY 2002 & Prior	FY 2003				FY 2004				FY 2005				FY 2006				FY 2007				
		1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	
In	236	30	30	30	29																	
Out	192	44	30	30	30	29																

	FY 2008				FY 2009				To Complete	TOTAL
	1	2	3	4	1	2	3	4		
In										
Out										

<b>CLASSIFICATION: UNCLASSIFIED</b>												
<b>Exhibit P-40, BUDGET ITEM JUSTIFICATION</b>										DATE: <b>February 2004</b>		
APPROPRIATION/BUDGET ACTIVITY <b>Aircraft Procurement, Navy/APN-5 Aircraft Modifications</b>							P-1 ITEM NOMENCLATURE <b>ADVERSARY SERIES</b>					
Program Element for Code B Items:							Other Related Program Elements					
	Prior Years	ID Code		FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	To Complete	Total
QTY		A										
COST (In Millions)	48.2	A		8.2	2.6	5.5	5.0	2.6			13.7	85.8
<p>These line items fund modifications to an inventory of 36 F-5E/F Adversary aircraft, and 14 F-16A/B Adversary aircraft. It allows the U.S. Navy to maintain as close a standardized configuration with the Air Force as possible based on need. It also allows the Navy to initiate unique structural or avionics modifications. The overall goal of the modifications budgeted in FY 2005 is to incorporate into the airframe and engines, selected Air Force approved Time-Compliance Technical Orders (TCTO's) to improve safety and reliability. The specific modifications budgeted and programmed are F-5 Structural Repair Program and F-16 A/B Stand-Up.</p> <p>* As per 7100 AIR-10.1.2KD/006 Reprogramming Action Requiring Congressional Prior Approval dated 8 May 2002, a reprogramming action was submitted and approved realigning \$500,000 of FY02 APN-5 funds to APN-4 to establish an F-5 Adversary Aircraft procurement program to procure one-F-5E aircraft from the Government of Switzerland. Additionally, the reprogramming action established an F-5 Adversary Aircraft Modification Engineering Change Proposal within this OSIP used to convert a total of 32 Swiss F-5E aircraft into a Navy approved configuration. The 32 Swiss F-5E aircraft will be procured using the above mentioned APN-4 funding line at a total cost of \$16M.</p>												
(TOA, \$ in Millions)												
<u>OSIP No.</u>	<u>Description</u>	<u>Prior Years</u>		<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>	<u>FY 2008</u>	<u>FY 2009</u>	<u>To Complete</u>	<u>Total</u>
29-81	F-5 STRUCTURAL REPAIR PROGRAM	23.8		6.3	2.6	5.5	5.0	2.6				45.8
13-02	F-16A/B	24.4		1.9							13.7	40.1
<b>Total</b>		<b>48.2</b>		<b>8.2</b>	<b>2.6</b>	<b>5.5</b>	<b>5.0</b>	<b>2.6</b>			<b>13.7</b>	<b>85.8</b>
<b>Note: Totals may not add due to rounding.</b>												

Exhibit P-3a Individual Modification

MODIFICATION TITLE: F-5 STRUCTURAL REPAIR PROGRAM (OSIP 29-81)

MODELS OF SYSTEMS AFFECTED: F-5 ADVERSARY AIRCRAFT TYPE MODIFICATION: SAFETY/RELIABILITY

DESCRIPTION/JUSTIFICATION: The Navy F-5E/F Adversary aircraft inventory, and all applicable funds are for 36 aircraft. USAF updated durability, damage and tolerance analysis, structural inspection, full scale fatigue testing and counting accelerometer data has identified structural fatigue in wings and fuselage areas. The US Navy plans to utilize these aircraft in the Adversary mission through FY2015, and beyond. However, aircraft will be grounded prior to 2015, when maximum fatigue life is reached on major structural components, unless further analysis and replacements are procured and installed. The Navy plans to replace the current high time fuselage with low time Swiss F-5E Fuselages. Also, Wings, as well as, Horizontal Stabilizers, Vertical Stabilizers, Upper/Lower Cockpit Longerons, and Dorsal Longerons require replacement as they reach their fatigue life limit. Installation of a Structural Data Recorder is planned to ensure accurate recording of flight profile data which can provide up to a 25% increase in usage of these high cost fatigue critical components. Also, repair of other critical safety-of-flight systems such as, Flight Controls and Canopy Latching mechanisms will be accomplished under this program.

DEVELOPMENT STATUS/MAJOR DEVELOPMENT MILESTONES: All components and systems required for this program are already qualified, and/or approved for Navy use. No Operational Testing is envisioned under this program.

FINANCIAL PLAN: (TOA, \$ in Millions)

	Prior Years		FY 2003		FY 2004		FY 2005		FY 2006		FY 2007		FY 2008		FY2009		To Complete		Total		
	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	
RDT&E																					
PROCUREMENT																					
Installation Kits																					
Various Kits	291	1.2																			
Wings	4	3.9																			
Vertical Stabilizer	21	3.6																			
Vertical Stabilizer Install Kit	10	0.2																			
Cockpit Longeron	8	0.6	5	0.3	5	0.3	9	0.6													
Horizontal Stabilizer	13	1.5																			
Dorsal Longeron	21	1.6																			
SDR Kits	10	0.9																			
Canopy Latch Mod/Refurb Kits	36	0.2																			
Swiss/US Conversion Kit	1	0.1	4	0.2	4	0.2	9	0.4													
Installation Kits N/R		3.4		2.8																	
Installation Equipment																					
Installation Equipment N/R																					
Engineering Change Orders																					
Data		1.2																			
Training Equipment																					
Support Equipment																					
ILS		1.9		0.4		0.1		0.7													
Other Support		1.0		0.7		0.3		0.8													
Interim Contractor Support																					
Installation Cost	291	0.4																			
Installation V-Stab	5	0.4	4	0.3	4	0.3	4	0.3													
Installation Dorsal Longeron	12	1.0																			
Installation Cockpit Longeron	6	0.6	4	0.4	4	0.4	9	0.9													
Installation Swiss to US Conversion	1	0.2	4	0.9	4	0.9	9	1.6													
Installation SDR	5	0.2	5	0.2																	
<b>Total Procurement</b>		<b>23.8</b>		<b>6.3</b>		<b>2.6</b>		<b>5.5</b>													

- Notes:
1. Totals may not add due to rounding
  2. Asterisk indicates amount less than \$50K

**Exhibit P-3a**

MODELS OF SYSTEMS AFFECTED: **F-5 ADVERSARY** MODIFICATION TITLE: **VERTICAL STABILIZER**

INSTALLATION INFORMATION: **DEPOT LEVEL**

METHOD OF IMPLEMENTATION: **CONCURRENT WITH PPHASE DEPOT MAINTENANCE**

ADMINISTRATIVE LEADTIME: **1 Months** PRODUCTION LEADTIME: **10 Months**

CONTRACT DATES: FY 2003: **Nov-02** FY 2004: **Nov -03** FY 2005: **Nov-03**

DELIVERY DATE: FY 2003: **Jul-03** FY 2004: **Jul-04** FY 2005: **Jul-05**

(\$ in Millions)

Cost:	Prior Years		FY 2003		FY 2004		FY 2005		FY 2006		FY 2007		FY 2008		FY 2009		To Complete		TOTAL		
	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	
FY 2002 & PY ( ) kits	5	0.4	4	0.3	4	0.3	4	0.3													
FY 2003 ( ) kits																					
FY 2004 ( ) kits																					
FY 2005 ( ) kits																					
FY 2006 ( ) kits																					
FY 2007 ( ) kits																					
FY 2008 ( ) kits																					
FY 2009 ( ) kits																					
To Complete ( ) kits																					
<b>TOTAL</b>	<b>5</b>	<b>0.4</b>	<b>4</b>	<b>0.3</b>	<b>4</b>	<b>0.3</b>	<b>4</b>	<b>0.3</b>													

Installation Schedule

FY 2002 & Prior	FY 2003				FY 2004				FY 2005				FY 2006				FY 2007				
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	
In	5		2	2			2	1	1			2	2								
Out	5		2	2			2	1	1			2	2								

	FY 2008				FY 2009				To Complete	Total
	1	2	3	4	1	2	3	4		
In										
Out										

**Exhibit P-3a**

MODELS OF SYSTEMS AFFECTED: **F-5 ADVERSARY** MODIFICATION TITLE: **COCKPIT LONGERON**

INSTALLATION INFORMATION: **DEPOT LEVEL**

METHOD OF IMPLEMENTATION: **CONCURRENT with PHASE DEPOT MAINTENANCE**

ADMINISTRATIVE LEADTIME: **1 Months** PRODUCTION LEADTIME: **8 Months**

CONTRACT DATES: FY 2003: **Nov -02** FY 2004: **Nov -03** FY 2005: **Nov-04**

DELIVERY DATE: FY 2003: **Jul-03** FY 2004: **Jul-04** FY 2005: **Jul-05**

(\$ in Millions)

Cost:	Prior Years		FY 2003		FY 2004		FY 2005		FY 2006		FY 2007		FY 2008		FY 2009		To Complete		TOTAL		
	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	
FY 2002 & PY ( ) kits	6	0.6	2	0.2																	
FY 2003 ( ) kits			2	0.2	3	0.2															
FY 2004 ( ) kits					1	0.2	4	0.4													
FY 2005 ( ) kits							5	0.5													
FY 2006 ( ) kits																					
FY 2007 ( ) kits																					
FY 2008 ( ) kits																					
FY 2009 ( ) kits																					
To Complete ( ) kits																					
<b>TOTAL</b>	<b>6</b>	<b>0.6</b>	<b>4</b>	<b>0.4</b>	<b>4</b>	<b>0.4</b>	<b>9</b>	<b>0.9</b>													

Installation Schedule

FY 2002 & Prior	FY 2003				FY 2004				FY 2005				FY 2006				FY 2007				
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	
In	6		1	3		3		1		4		5									
Out	6			3			1	2	1	1		3									

	FY 2008				FY 2009				To Complete	Total
	1	2	3	4	1	2	3	4		
In										
Out										

Exhibit P-3a

MODELS OF SYSTEMS AFFECTED: F-5 ADVERSARY MODIFICATION TITLE: STRUCTURAL DATA RECORDER

INSTALLATION INFORMATION: **DEPOT LEVEL**

METHOD OF IMPLEMENTATION: CONCURRENT with PHASE DEPOT MAINTENANCE

ADMINISTRATIVE LEADTIME: 1 Months PRODUCTION LEADTIME: 7 Months

CONTRACT DATES: FY 2003: Nov -02 FY 2004: N/A FY 2005: N/A

DELIVERY DATE: FY 2003: May-03 FY 2004: N/A FY 2005: N/A

(\$ in Millions)

Cost:	Prior Years		FY 2003		FY 2004		FY 2005		FY 2006		FY 2007		FY 2008		FY 2009		To Complete		TOTAL	
	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$
FY 2002 & PY ( ) kits	5	0.2	5	0.2																
FY 2003 ( ) kits																				
FY 2004 ( ) kits																				
FY 2005 ( ) kits																				
FY 2006 ( ) kits																				
FY 2007 ( ) kits																				
FY 2008 ( ) kits																				
FY 2009 ( ) kits																				
To Complete ( ) kits																				
<b>TOTAL</b>	<b>5</b>	<b>0.2</b>	<b>5</b>	<b>0.2</b>																

Installation Schedule

	FY 2002 & Prior	FY 2003				FY 2004				FY 2005				FY 2006				FY 2007			
		1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
In	5			3	2																
Out	5			3	2																

	FY 2008				FY 2009				To Complete	Total
	1	2	3	4	1	2	3	4		
In										
Out										

Exhibit P-3a

MODELS OF SYSTEMS AFFECTED: **F-5 ADVERSARY** MODIFICATION TITLE: **SWISS TO US CONVERSION**

INSTALLATION INFORMATION: **DEPOT LEVEL**

METHOD OF IMPLEMENTATION: **CONCURRENT with PHASE DEPOT MAINTENANCE**

ADMINISTRATIVE LEADTIME: **1 Months** PRODUCTION LEADTIME: **1 Months**

CONTRACT DATES: FY 2003: **Nov-02** FY 2004: **Nov-03** FY 2005: **Nov-04**

DELIVERY DATE: FY 2003: **Dec-02** FY 2004: **Dec-03** FY 2005: **Dec-04**

(\$ in Millions)

Cost:	Prior Years		FY 2003		FY 2004		FY 2005		FY 2006		FY 2007		FY 2008		FY 2009		To Complete		TOTAL	
	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$
FY 2002 & PY ( ) kits	1	0.2																		
FY 2003 ( ) kits			4	0.9																
FY 2004 ( ) kits					4	0.9														
FY 2005 ( ) kits							9	1.6												
FY 2006 ( ) kits																				
FY 2007 ( ) kits																				
FY 2008 ( ) kits																				
FY 2009 ( ) kits																				
To Complete ( ) kits																				
<b>TOTAL</b>	<b>1</b>	<b>0.2</b>	<b>4</b>	<b>0.9</b>	<b>4</b>	<b>0.9</b>	<b>9</b>	<b>1.6</b>												

Installation Schedule

FY 2002 & Prior	FY 2003				FY 2004				FY 2005				FY 2006				FY 2007			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
In	1																			
Out			1	2	2	2	1	1		2	4	3								

	FY 2008				FY 2009				To Complete	Total
	1	2	3	4	1	2	3	4		
In										
Out										

Exhibit P-3a Individual Modification

MODIFICATION TITLE: F-16A/B STAND-UP (OSIP-13-02)

MODELS OF SYSTEMS AFFECTED: F-16 ADVERSARY AIRCRAFT TYPE MODIFICATION: SAFETY/RELIABILITY

DESCRIPTION/JUSTIFICATION: OSD ordered Air Force and Navy to split 28 F-16's left over from the cancelled Peace Gate Sale to Pakistan. OSIP funding will support the induction of 14 F-16 aircraft into the Adversary fleet at NSAWC, Fallon Nevada. The US Navy plans to utilize these aircraft as a Category-IV Adversary aircraft, simulating the threat of modern high performance fighters. The Navy will operate the 14 F-16's in a training program, providing approximately 300 sorties per aircraft per year. All modifications under this OSIP are to incorporate engine and airframe TCTO's. The Airframe Mod Incorporation will include a Structural Data Recorder.

DEVELOPMENT STATUS/MAJOR DEVELOPMENT MILESTONES: OSD directed USN to stand-up 14 F-16 Adversary aircraft at NSAWC. All modifications will install previously qualified systems or equipment. Ten F-16A and four F-16Bs have been allotted to the Navy. No DT or OT is required. IOC occurred October 2002 with FOC in September 2003.

FINANCIAL PLAN: (TOA, \$ in Millions)

	Prior Years		FY 2003		FY 2004		FY 2005		FY 2006		FY 2007		FY 2008		FY2009		To Complete		Total		
	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	
RDT&E																					
PROCUREMENT																					
Installation Kits																					
Various Kits																					
Airframe Mod Incorporation	14	2.0																			
Engine Update Modification	14	11.1																			
Structural Data Recorder																					
CADS/PADS	14	0.7																			
Installation Kits N/R																					
Installation Equipment																					
Installation Equipment N/R																					
Engineering Change Orders																					
Data		1.0																			
Training Equipment																					
Support Equipment		4.5		0.9																	
ILS		1.2		0.6																	
Other Support		3.8		0.4																	
Interim Contractor Support																					
Installation Cost																					
<b>Total Procurement</b>		<b>24.4</b>		<b>1.9</b>																	

- Notes:
1. Totals may not add due to rounding
  2. Asterisk indicates amount less than \$50K



## INDIVIDUAL MODIFICATION

Exhibit P-3a

MODIFICATION TITLE:

**CORRECTION OF DISCREPANCIES IDENTIFIED DURING PRELIMINARY EVALUATION, SUBSEQUENT FLIGHT TEST PROGRAMS AND FLEET OPERATIONS (OSIP 11-84)**

MODELS OF SYSTEM AFFECTED:

**F/A-18 A/B/C/D**

TYPE MODIFICATION:

**SAFETY /RELIABILITY/IMPROVEMENT**

DESCRIPTION/JUSTIFICATION:

\*Corrections to discrepancies found during testing and evaluation can sometimes be incorporated into production aircraft, effective with the physical configuration audit which establishes the product baseline of the aircraft. However, when this cannot be done due to time constraints, retrofit of the changes into already delivered aircraft requires funding through the Aircraft Modification Program. Additionally, deficiencies discovered during fleet operations must be corrected. The unacceptable alternative to retrofitting would be multiple configurations in the fleet, which will create maintenance and supply problems, and in many cases the mission capability of the aircraft would be adversely affected as well as reduced service life. Corrections to the following items/conditions are required:

<p>External Stores EMI Protection (ECP 087S1)  Auto AC Bus Isolation (ECP 121R1)  Battery Control Relay Unit (ECP 165R1)  FY86 Block Upgrade (ECP 178R1C1)  Center Fuselage Structural Mods (ECP 241R1)  Dorsal Longeron (ECP 251)  Dorsal Longeron (ECP 251R1)  470.5 Bulkhead (ECP 262)*  Righthand AMAD Bay (ECP 267R1*)  Y508 Former (ECP 276)  AFT Engine Mount (ECP 305R1)*  Y657-35 Engine Bay Door Former (ECP 306)  Main Landing Gear (MLG) Planing Link (ECP 311*)  MLG Trunnion Upgrade (ECP 319)*  Y488 Bulkhead (ECP 320)  Wing Fatigue Repair (ECP 353)  MLG Shoulder Bolt (ECP 355)  ASPJ System Improvement (ECP 364)  Y470 Bulkhead Improvement (ECP 365)  #1 Fuel Cell Floor (ECP 367)  MLG Retract Actuator (ECP 375)  Fretting on Formers &amp; Spindles (ECP 391)  Fuselage Skin, Y518 to Y534 (ECP 402)*  Fuselage Skin, Y518 to Y534 (ECP 402R1)*  Inlet Duct Skin at Y453 (ECP 417)  Y470.5 Bulkhead MLG Trunnion (ECP 428)  Speed Brake Trough (ECP 440)  SUU-63 Wing Pylon Door Panel (ECP 488)  Y470.5 Bulkhead Fatigue Change (ECP 492)  Fuselage Skin at Y453 (ECP 498)  Nacelle Skin Fatigue Improvements (ECP 501)  LAU-115 Sparrow Mod (ECP 506)*  ST-16 Failures (ECP 536)*  Improvement of Inner Wing SPAR (ECP 544)  Fuel Barrier Web (ECP 548)  Wing Drag Longeron (ECP 550)*  Y326.5 Plate Nut (ECP 561)  Lower Center Keel Fire Hazard (ECP 562)  Aileron/Trailing Edge Flap (ECP 574)  Flight Control Computer (ECP 595)  Hydraulic Temp Gauges (ECP NI 879)  Environment Control System Wiring (NI 742)  Wing Fuel Dams (NI 796)  MLG Trunnion Assembly (NI 824)  Heat Exchanger (NI 827)  Night Vision Display System (NVDS) (NI 830)  Trailing Edge Flap (NI 839)  Birdstrike Res Windshield (NI 843)  Aileron Hinge Mod (NI 844)  ANTI G VALVE (ECP XXX)  Tank 2 &amp; 3 Floor Crack (ECP XXX2)  Side Fuselage Crack (ECP592)  Front SPAR Crack (ECP XXX5)  Forward Lower Keel Modification (ECP NI 931)  Main Landing Gear (MLG) Axle (ECP 952)  MLG Y488 Bulkhead (ECP XXX8)  LOX OBGSS Conversion (ECP XXX9)  Crease Longeron (ECP XX10)  Heat Deterrent (ECP XX11)</p>	<p>Provide for the application of external stores EMI Protection. This ECP includes Installation Costs ONLY.  Modifies the 50A Battery Charging Converter installation to automatically isolate the busses and reset the generators following a dual power outage.  Safety modification to the utility/emergency battery control circuits and adds a battery relay control unit. Prevents inadvertent battery discharge.  Increases the power handling capabilities of the four port antenna and the RF switchable filter in order to accommodate the RF power output requirements of the ASPJ System.  Improves fatigue for the Dorsal Deck, Duct Skin rivets at Y442, ECS Inlet Casting, and Y419 Nacelle Former at Ramp Truss Attachment.  Life extension modification to the Dorsal Longeron.  Life extension modification to the Dorsal Longeron.  Improves the fatigue life of the Y470.5 Bulkhead Outer Cap.  Reliability and maintainability improvement to the interference between the motive flow tube and the hot fuel recirculation tube.  Structural improvement of the Y508 Former by increasing the flange thickness and reinforcing the former with integral ribs.  Safety modification improves the aft engine mount support to prevent cracking in the aft engine mount support fitting.  Modifies the existing door former to prevent cracking.  Safety modification to the existing planing link assembly. Belleville washers spring is replaced with nested external compression springs to provide additional overcenter locking force and stroke capability.  Safety modification reconfigures and strengthens the MLG trunnion assembly to prevent catastrophic failure upon landing or takeoff.  Modifies the Y488 bulkhead to reduce structural stress and improve fatigue life.  Modifies the fastener holes in the Wing Panel Forward Spar and the #4 Intermediate Wing Spar to increase fatigue life.  Safety modification provides new shoulder bolts to correct a deficiency concerning elongation of the AFT bolt hole in the MLG Door Actuator Support Fitting.  Improves reliability and maintainability by improving the cooling system and correcting transmit switchable filter qual test problems.  Modifies the Y470 bulkhead to reduce structural stress and improve fatigue life.  Safety modification to improve the fuel cell floor strength to prevent cracking during catapult.  Redesigns the MLG Retract Actuator Support Fitting and the Flange of Y470.5 Bulkhead where the fitting attaches and revises hydraulic timing to lengthen the Fatigue Life of the structures.  Safety modification to correct fretting observed on outboard formers of horizontal stabilizer.  Modifies exterior fittings and adds and internal bathtub to strengthen the area, reduce structural stress, and improve fatigue life.  Modifies exterior fittings and adds and internal bathtub to strengthen the area, reduce structural stress, and improve fatigue life.  Addresses the retrofit design which will provide 12,000 SFH of life without cracks for the Inlet Duct Skin.  Corrects the deficiency in the MLG Trunnion support at Y470.5 bulkhead.  Modifies the existing speed brake trough area to strengthen it and improve fatigue life.  Safety modification to the existing door panel to preclude loss of the door during flight.  Modifies the thickness of the existing bulkhead web to increase strength and improve fatigue life.  Safety modification to strengthen existing fasteners attaching the P/N 74A324350 former to Y453 bulkhead.  Retrofits the Inlet Nacelle Skin to correct acoustic vibration related fatigue failures.  Modifies the lower rail of the LAU-115 to strengthen the area of the AIM-7 Sparrow missile forward hanger interface and improve fatigue life.  Modifies aircraft between Lot VI and Lot XVI to realize Full Life Airframe (6000 Fatigue Hours)  Strengthens the existing inner wing spar to improve fatigue life.  Safety improvement to the existing fuel barrier web to prevent fuel leaks.  Structural improvement to the Wing Drag Longeron due to tabs attached to the closeout webs were cracking during installation.  Modifies the existing fasteners at the Y326.5 Bulkhead to improve fatigue life.  Safety improvement to the secondary pressure regulator bay to eliminate fire hazards.  Provides a full life improvement for aircraft degradation caused by cracked trailing edge flap and aileron hinges.  Improves safety-of-flight for the recovery from, and resistance to, out-of-control flight (OOCF) while also eliminating anomalies cited in FCC OFP 91C*004. <b>(NON-RECURRING COSTS ONLY)</b>  Improves the reliability of the hydraulic temperature gauges.  Modifies wiring to the number 3 Relay Panel Assembly to connect the Left MainGear (LMG) Weight on Wheels (WOW) Relay ABD the Dump/RAM Dump Relay.  Safety improvement modifies the inner wing inboard closure rib to prevent fuel leaks.  Safety improvement to the MLG trunnion assembly to improve fatigue life and prevent failed landing gear mishaps.  Provides for the removal of the nickel core and replaces with a more reliable stainless steel and nickel core.  Adds capability to the lighting system to make the NVDS compatible.  Safety modification to the trailing edge flap to correct flap departures while in flight.  Safety modification to the windshield to protect against birdstrikes during flight.  Provide a full-life improvement for aircraft degradation caused by cracked trailing edge flap and aileron hinges.  Improves pilot G-Load tolerance as part of the Navy Combat Edge (NCE) Anti-G Protection System.  Safety modification to correct cracks at Y431, Y442, and Y453 in the fuel cavity floor deck centerline under tank two and three.  Safety improvement to the fatigue life of the forward skin section of the chem-milled panels.  Strengthens the existing front inner wing SPAR to improve fatigue life.  Improves fatigue life of the Nose Landing Gear (NLG) Drag Brace.  Incorporation of Full Life redesign of Main Landing Gear Axle Polygon, extending Axle's service life from current 8300 total landings to 13000.  Restores Full Life to Y488 Bulkhead due to cracks around MLG Uplock hardware holes  Retrofit LOX equipped aircraft with OBOGS solutions that are integrated with supplemental oxygen systems  Restores the load path lost when the Crease Longeron cracks at FS 453.  Modifies the aircraft to correct structural fatigue problems caused by degraded ECS Peri-Seals.</p>
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DEVELOPMENT STATUS/MAJOR DEVELOPMENT MILESTONES:

Each change has been or will be tested prior to installation in the F/A-18.

ECP 536 moved from OSIP 11-99 to OSIP 11-84 in FY02. No installs currently planned; possible in future.

Unit cost variances due to: - Many ECP Kits were/are provided to the Navy at no additional costs (warranty kits).\*

- Some ECPs have numerous Technical Directives with different unit costs.

INDIVIDUAL MODIFICATION																					
MODIFICATION TITLE:		CORRECTION OF DISCREPANCIES IDENTIFIED DURING PRELIMINARY EVALUATION, SUBSEQUENT FLIGHT TEST PROGRAMS AND FLEET OPERATIONS (OSIP 11-84)																			
MODELS OF SYSTEM AFFECTED:		F/A-18 A/B/C/D										TYPE MODIFICATION: SAFETY /RELIABILITY/IMPROVEMENT									
FINANCIAL PLAN (TOA, \$ in Millions):																					
	Prior Years		FY 2003		FY 2004		FY 2005		FY 2006		FY 2007		FY 2008		FY 2009		To Complete		TOTAL		
	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	
RDT&E																					
PROCUREMENT																					
Installation Kits																					
ECP 087S1/External Stores EMI Protection																					
ECP 121R1/Auto AC Bus Isolation	356	0.7																			
ECP 166R1/Battery Control Relay Unit	251	0.5																			
ECP 178/Y86 Block Upgrade	82	4.7																			
ECP 241R1/Center Fuselage Structural Mods	1,719	0.6																			
ECP 251R1/Dorsal Longeron	1,928	0.8																			
ECP 251R1/Dorsal Longeron	443	8.6																			
ECP 262/470.5 Bulkhead	494	*																			
ECP 267R1/Righthand AMAD Bay	287	*																			
ECP 276/Y508 Former	836	1.0																			
ECP 305/AFT Engine Mount	619	*																			
ECP 306/Y657.35 Engine Bay Door Former	688	0.9																			
ECP 311/Main Landing Gear (MLG) Planing Link	10	*																			
ECP 319/MLG Trunnion Upgrade	1,405	*																			
ECP 320/Y488 Bulkhead	473	1.2																			
ECP 353/Wing Fatigue Repair	98	0.7																			
ECP 355/MLG Shoulder Belt	350	0.2																			
ECP 364/ASPJ System Improvement	225	*																			
ECP 365/Y470 Bulkhead Improvement	982	1.0																			
ECP 367/#1 Fuel Cell Floor	557	0.3																			
ECP 375/MLG Retract Actuator	1,323	5.7																			
ECP 391/Fretting on Formers & Spindles	582	0.3																			
ECP 402/Fuselage Skin, Y518 to Y533	638	*																			
ECP 402R1/Fuselage Skin, Y518 to Y534	688	1.8	32	0.3																	
ECP 417/Inlet Duct Skin at Y453	575	2.0																			
ECP 428/Y470.5 Bulkhead MLG Trunnion	2	0.1																			
ECP 440/Speed Brake Trough	591	1.0																			
ECP 488/SUU-63 Wing Pylon Door Panel	1,351	0.8																			
ECP 492/Y470.5 Bulkhead Fatigue Change	688	1.4																			
ECP 498/Fuselage Skin at Y453	653	0.6	43	0.1																	
ECP 501/Nacelle Skin Fatigue Improvements	663	3.7																			
ECP 506/LAU-115 Sparrow Mod	935	*																			
ECP 536/ST-16 Failures	9	*						10	1.5												
ECP 544/Improvement of Inner Wing SPAR	29	0.3																			
ECP 548/Fuel Barrier Web	750	1.4																			
ECP 550/Wing Drag Longeron	119	0.2																			
ECP 561/Y326.5 Plate Nut	532	0.2																			
ECP 562/Lower Center Keel Fire Hazard	798	0.4																			
ECP 574/Trailing Edge Flaps	417	11.1	147	4.0																	
ECP 574/Aileron	707	18.2			50	1.7															
N1879/Hydraulic Temp Gauges	150	0.2	100	0.1	100	0.1	100	0.1													
NI 742/Environment Control System Wiring	150	0.2	100	0.1																	
NI 796/Wing Fuel Dams	315	0.4	100	0.2	50	0.1	50	0.1													
NI 824/MLG Trunnion Assembly	425	13.4																			
NI 827/Heat Exchanger	37	0.4																			
NI 830/Night Vision Display System (NVDS)	14	0.3																			
NI 839/Trailing Edge Flap	1,150	9.4																			
ECP XXX - ANTI G VALVE	800	1.0																			
ECP XXX2 -Tank 2 & 3 Floor Crack					80	1.6	44	0.9													
ECP 592 - Side Fuselage Crack					50	1.3	10	0.3													
ECP XXX5 - Front SPAR Crack					80	1.6	80	0.2													
ECP NI 931 - Forward Lower Keel Modification					80	1.2	20	0.4													
ECP 952 - MLG Axle			369	14.8	285	11.6															
ECP XXX8 - MLG Y488 Bulkhead					80	0.2	80	0.2													
ECP XXX9 - LOX OSGS Conversion																					
ECP XX10 - Crease Longeron																					
ECP XX11 Heat Derrant								50	1.0												
Installation Kits N/R		11.1		5.6																	0.7
Installation Equipment																					
Installation Equipment N/R		0.1																			0.6
Engineering Change Orders																					
Data		1.2		*		*															0.1
Training Equipment																					
Support Equipment		1.5																			
ILS		67.8		16.9		16.5		11.0													
Other Support								1.3													1.3
Interim Contractor Support																					
Installation Cost	16,160	193.3	992	15.3	761	13.7	724	14.9													
<b>TOTAL PROCUREMENT</b>		<b>370.5</b>		<b>57.4</b>		<b>51.0</b>		<b>33.4</b>													

- Notes:
1. Totals may not add due to rounding.
  2. Asterisk indicates amount less than \$50K.
  3. ECP 087S1 (External Stores EMI Protection) and ECP XX10 (Crease Longeron) includes "Installation Costs" only.
  4. ECP 595 (Flight Control Computer) includes Non-Recurring Costs only.

Exhibit P-3a	INDIVIDUAL MODIFICATION																				
MODIFICATION TITLE:	<b>AN/ARC-210 ELECTRONIC PROTECTION (EP) COMBINATION RADIO (OSIP 39-92)</b>																				
MODELS OF SYSTEM AFFECTED:	<b>F/A-18C/D</b>						TYPE MODIFICATION: <b>CAPABILITY IMPROVEMENT</b>														
DESCRIPTION/JUSTIFICATION:																					
<p>The AN/ARC-210 (ORD# 486-88-93) is a combination UHF/VHF, AM/FM jam-resistant radio that was developed to allow for EP interoperability with the Air Force, Army and NATO. The radio provides dual UHF capability for carrier based TACAIR; VHF FM for close air support and maritime channels; VHF AM for air traffic control; and EP capabilities using the Air Force developed waveforms (UHF-AM HAVEQUICK I and II), and the Army developed waveform (VHF-FM SINGGARS). The AN/ARC-210 can be controlled by either a remote control unit or via a MIL-STD-1553 multiplex data bus. The EP parameters and single channel preset information can be loaded via a CYZ-10 Data Transfer Device (DTD). The fill information can consist of word-of-day for HAVEQUICK; the KGV-10 transec variable, hopsets and frequency lock-out tables for SINGGARS. F/A-18 ARC-210 requirements will be satisfied by retrofitting Lot X through Lot XVI and forward fitting Lot XVII through Lot XXI.</p>																					
DEVELOPMENT STATUS/MAJOR DEVELOPMENT MILESTONES:																					
<p>F/A-18 was the lead aircraft for the AN/ARC-210 development program; therefore, retrofit procurement began in FY92. AN/ARC-210 Milestone III was approved in April 1994. First article test completed in January 1994. The additional requirements shown in this budget for FY2001 - 2004 reflect the fleet's desire for a common communications capability for Lots X and above F/A-18C/D. ARC-210 radios removed from other aircraft during DCS upgrade will be installed in F/A-18C/D Lots X and XI.</p>																					
FINANCIAL PLAN (TOA, \$ in Millions):																					
	Prior Years		FY 2003		FY 2004		FY 2005		FY 2006		FY 2007		FY 2008		FY 2009		To Complete		TOTAL		
	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	
RDT&E																					
PROCUREMENT																					
Installation Kits																					
Lot XII through XXI Kit	79	1.3																	79	1.3	
Lot X through XI Kit	141	4.0																	141	4.0	
Installation Kits N/R		0.8																			0.8
Installation Equipment **																					
Lot XII through XXI Kit	114	5.6																	114	5.6	
Lot X through XI Kit																					
Installation Equipment N/R																					
Engineering Change Orders																					
Data		0.3																			0.3
Training Equipment																					
Support Equipment																					
ILS		0.2		0.1		*															0.3
Other Support																					
Interim Contractor Support																					
Installation Cost	119	2.8	60	1.4	41	1.1													220	5.4	
<b>TOTAL PROCUREMENT</b>		14.9		1.5		1.2															17.6
Notes:																					
1. Totals may not add due to rounding																					
2. Asterisk indicates amount less than \$50K																					
3. ** Quantities refer to number of radios (2/aircraft). The equipment and common logistics requirements for this OSIP have been funded in the AN/ARC-210 Common OSIP (4-94) starting in FY94.																					

**Exhibit P-3a**

MODELS OF SYSTEMS AFFECTED: F/A-18C/D MODIFICATION TITLE: AN/ARC-210 ELECTRONIC PROTECTION (EP) COMBINATION RADIO (OSIP 39-92)

INSTALLATION INFORMATION:

METHOD OF IMPLEMENTATION: PUBLIC/PRIVATE COMPETITION AND AT NAVAL AVIATION DEPOTS.

ADMINISTRATIVE LEADTIME: 3 Months PRODUCTION LEADTIME: 24 Months

CONTRACT DATES: FY 2003: \_\_\_\_\_ FY 2004: \_\_\_\_\_ FY 2005: \_\_\_\_\_

DELIVERY DATE: FY 2003: \_\_\_\_\_ FY 2004: \_\_\_\_\_ FY 2005: \_\_\_\_\_

(\$ in Millions)

Cost:	Prior Years		FY 2003		FY 2004		FY 2005		FY 2006		FY 2007		FY 2008		FY 2009		To Complete		TOTAL	
	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$
FY 2002 & PY (220) kits	119	2.8	60	1.4	41	1.1													220	5.4
FY 2003 ( ) kits																				
FY 2004 ( ) kits																				
FY 2005 ( ) kits																				
FY 2006 ( ) kits																				
FY 2007 ( ) kits																				
FY 2008 ( ) kits																				
FY 2009 ( ) kits																				
To Complete ( ) kits																				
<b>TOTAL</b>	119	2.8	60	1.4	41	1.1													220	5.4

Installation Schedule

	FY 2002 & Prior	FY 2003				FY 2004				FY 2005				FY 2006					
		1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4		
In	119	0	20	20	20	0	15	15	11	0	0	0	0	0	0	0	0	0	0
Out	119	0	20	20	20	0	15	15	11	0	0	0	0	0	0	0	0	0	0

	FY 2007				FY 2008				FY 2009				To Complete	TOTAL	
	1	2	3	4	1	2	3	4	1	2	3	4			
In	0	0	0	0	0	0	0	0	0	0	0	0	0	0	220
Out	0	0	0	0	0	0	0	0	0	0	0	0	0	220	

<b>Exhibit P-3a</b>	<b>INDIVIDUAL MODIFICATION</b>																				
MODIFICATION TITLE:	<b>COMMON CONFIGURATION (OSIP 19-94)</b>																				
MODELS OF SYSTEM AFFECTED:	<b>F/A-18A/B/C/D</b>										TYPE MODIFICATION: <b>CAPABILITY IMPROVEMENTS / SAFETY</b>										
DESCRIPTION/JUSTIFICATION:																					
<p>Prior to FY 2002, this OSIP was used for various relatively small capability improvement ECPs. Included in this OSIP were: Cockpit Video Recording System (CVRS); AYK-14 Very High Speed Integrated Circuit (VHSIC) Processor Module; and the Advanced Targeting FLIR (subsequently moved to its own OSIP). The F/A-18 CVRS upgrade improved operational debriefing, increased resolution and recording time, and improved fleet training. The AN/AYK-14(V) Very High Speed Integrated Circuit (VHSIC) Processor Module has three important features: a new computer chassis, VHSIC processor cards and 1M/W memory on the processor cards that allowed necessary growth through the 1990's and beyond. With the F/A-18 C/D out of production, since 1997 this OSIP is used to procure modified Peculiar Support Equipment and F/A-18 unique Mission Planning requirements, as well as incorporate upgrades or new process of equipment to replace them as a result of parts obsolescence to the equipment procured in prior years. The Mission Planning System provides capabilities and displays required by the aircrew to plan and execute a mission from a cockpit perspective by providing a set of aircraft planning functions, report, and graphic display options.</p>																					
DEVELOPMENT STATUS/MAJOR DEVELOPMENT MILESTONES:																					
<p>CVRS utilizes moderately militarized HI-8MM video recorders that are currently available (no development required) with CVRS installed. The AN/AYK-14 is fully developed. It was production incorporated into Lot XV and subsequent F/A-18C/Ds and has had retrofit funding since 1994.</p>																					
FINANCIAL PLAN (TOA, \$ in Millions):																					
	Prior Years		FY 2003		FY 2004		FY 2005		FY 2006		FY 2007		FY 2008		FY 2009		To Complete		TOTAL		
	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	
RDT&E																					
PROCUREMENT																					
INSTALLATION KITS																					
NI818/CVRS	314	2.9																			
CDII-045/VPM("O"Level)	559	57.0																			
CDII-051/VPM("O"Level)	217	20.6																			
INSTALLATION KITS N/R		33.6		6.2																	
INSTALLATION EQUIP.																					
NI818/CVRS																					
CDII-045/VPM("O"Level)																					
CDII-051/VPM("O"Level)	291	7.6																			
INSTALLATION EQUIP. N/R																					
ENGINEERING CHANGE ORDERS																					
DATA		3.8																			
TRAINING EQUIPMENT		0.3																			
SUPPORT EQUIPMENT(SE NR, PSE,SE ILS)		41.3		11.9		0.8		0.1													
ILS		4.6		1.8																	
OTHER SUPPORT																					
INTERIM CONTRACT SUPPORT																					
Installation Cost	727	6.2																			
<b>TOTAL PROCUREMENT</b>		177.7		19.8		0.8		0.1													
Notes:																					
1. Totals may not add due to rounding																					
2. Asterisk indicates amount less than \$50K																					

<b>Exhibit P-3a</b>	<b>INDIVIDUAL MODIFICATION</b>																			
<b>MODIFICATION TITLE:</b>	<b>F/A-18 GLOBAL POSITIONING SYSTEM (GPS) (OSIP 36-94)</b>																			
<b>MODELS OF SYSTEM AFFECTED:</b>	<b>F/A-18A/B/C/D</b>	<b>TYPE MODIFICATION:</b>	<b>SAFETY / CAPABILITY IMPROVEMENT</b>																	
<b>DESCRIPTION/JUSTIFICATION:</b>																				
GPS (ORD# 401-88-95) is a space-based worldwide radio navigation aid that provides precise position, velocity, and time data under all-weather conditions twenty-four hours a day, and is proposed to replace land-based TACAN. Incorporation of the GPS in the F/A-18 aircraft provides the following: accurate navigation position and velocity, precision close air support, onboard sensor positioning, command and control guidance, search and rescue guidance, accurate all-weather air drops and accurate time standard. The F/A-18A (Lot VI through IX) GPS requirements will be satisfied by retrofitting the Embedded Global Positioning Inertial Navigation System. F/A-18C/D requirements will be satisfied by retrofitting the Miniature Airborne GPS Receiver (MAGR) in Lot X through Lot XVI and forward fitting Lot XVII through Lot XXI. This OSIP will also be used to perform non-recurring efforts to address parts obsolescence and to examine potential GPS-related capability upgrades associated with Network Centric Operations and interoperability requirements.																				
<b>DEVELOPMENT STATUS/MAJOR DEVELOPMENT MILESTONES:</b>																				
The Embedded Global Positioning System (GPS) and Inertial Navigation System (INS) (EGI) program is a joint multi-user NDI acquisition which achieved Milestone III in FY94. Contract award was 4 March 1994, with Engineering Design Review completed in July 1994.																				
The Embedded GPS/INS (EGI) system was supposed to be an NDI system, however, it has required a significant amount of development, which has resulted in schedule slips. As a result, F/A-18 has been adversely impacted in the following areas:																				
<ol style="list-style-type: none"> <li>1. F/A-18A/B/C/D can no longer meet the Congressional mandate to have GPS installed in all A/C by the year 2005.</li> <li>2. F/A-18 Mission Computer S/W testing to incorporate EGI functionality has experienced continual slips due to EGI hardware immaturity.</li> <li>3. The immaturity of the EGI has resulted in a delay of the Validation and Verification ( Val/Ver ) of the EGI A-Kits in all versions of the F/A-18.</li> <li>4. As a result of the above impacts, a decision was made to install the Miniature Airborne GPS Receiver (MAGR) in F/A-18C/D Lot X through Lot XVII A/C. MAGR is a lower risk option and has been installed as a forward fit in Lot XVII and above A/C. Since EGI performance has not completed testing, MAGR is the only option that ensures the most rapid, low risk retrofit. This plan results in the least impact to further F/A-18C/D modifications. Furthermore, a decision was also made to continue with the development of the EGI in order to meet GPS requirements for the F/A-18A/B (Lot IX and below) . F/A-18 A/B's cannot be retrofitted with a MAGR integration due to space restrictions and airframe differences. In summary, F/A-18 has had to develop new integration plans for GPS that now include the integration of both MAGR and EGI. EGI A-Kits were put on order using FY96/97/98 funding based on an NDI assumption, however due to above mentioned reasons, the EGI A-Kits now need to be converted to MAGR A-Kits with no pricing impact. The procurement of MAGR B-Kits to catch up with converted MAGR A-Kits has resulted in F/A-18 not meeting the full funding requirement while protecting the risk and schedule of this high visibility program. PMA-209 (OSIP 71-88) is funding the procurement of a portion of the installation equipment reflected in the total column below which explains the difference between the installation kits and equipment. Increase in NRE funding in FY01 thru 03 due to requirements for increased testing and integration for "B" kits (installation equipment).</li> </ol>																				
<b>FINANCIAL PLAN (TOA, \$ in Millions):</b>																				
	Prior Years		FY 2003		FY 2004		FY 2005		FY 2006		FY 2007		FY 2008		FY 2009		To Complete		TOTAL	
	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$
RDT&E																				
<b>PROCUREMENT</b>																				
Installation Kits																				
Lot VI through IX Kit (Note 3)	67	5.1															152	1.1	219	6.1
Lot X through XVI Kit	392	6.3	15	0.5													36	1.1	443	7.9
Installation Kits N/R		34.0																		34.0
Installation Equipment																				
Lot VI through IX Kit																	152	13.3	152	13.3
Lot X through XVI Kit	358	11.4	20	0.8	16	0.6	16	0.7									33	4.1	443	17.6
Installation Equipment N/R							0.5													0.5
Engineering Change Orders		2.5		1.6																4.1
Data																				
Training Equipment		2.0																		2.0
Support Equipment		1.8																		1.8
ILS		1.0		0.1		0.2		0.4												1.7
Other Support																				
Interim Contractor Support																				
Installation Cost	365	9.2	64	1.5	15	0.4	15	0.4									188	7.9	647	19.3
<b>TOTAL PROCUREMENT</b>		73.2		4.5		1.2		1.9										27.4		108.2
<b>Notes:</b>																				
1. Update required based on FY02 magr procurement \$2,548K from OSIP 19-01.																				
2. Funds in house will be realign in FY06 to support installation of equipment.																				
3. Asterisk indicates amount less than \$50K																				
4. 15 "A" kits procured in FY91 to 98 were not installed due to technical issue addressed above.																				

**Exhibit P-3a**

MODELS OF SYSTEMS AFFECTED: F/A-18A/B/C/D MODIFICATION TITLE: F/A-18 GLOBAL POSITIONING SYSTEM (GPS) (OSIP 36-94)

INSTALLATION INFORMATION:

METHOD OF IMPLEMENTATION: Navy Depot Field Mod Team at Five (5) Locations

ADMINISTRATIVE LEADTIME: 5 Months PRODUCTION LEADTIME: 18 Months

CONTRACT DATES: FY 2003: Mar-03 FY 2004: \_\_\_\_\_ FY 2005: \_\_\_\_\_

DELIVERY DATE: FY 2003: Sep-04 FY 2004: \_\_\_\_\_ FY 2005: \_\_\_\_\_

(\$ in Millions)

Cost:	Prior Years		FY 2003		FY 2004		FY 2005		FY 2006		FY 2007		FY 2008		FY 2009		To Complete		TOTAL		
	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	
FY 2002 & PY ( 459 ) kits	365	9.2	64	1.5	15	0.4														444	11.0
FY 2003 ( 15 ) kits							15	0.4												15	0.4
FY 2004 ( ) kits																					
FY 2005 ( ) kits																					
FY 2006 ( ) kits																					
FY 2007 ( ) kits																					
FY 2008 ( ) kits																					
FY 2009 ( ) kits																					
To Complete ( 188 ) kits																	188	7.9	188	7.9	
<b>TOTAL</b>	<b>365</b>	<b>9.2</b>	<b>64</b>	<b>1.5</b>	<b>15</b>	<b>0.4</b>	<b>15</b>	<b>0.4</b>									<b>188</b>	<b>7.9</b>	<b>647</b>	<b>19.3</b>	

15 "A" kits procured in FY91 to 98 were installed due to technical issue addressed above.

Installation Schedule

	FY 2002 & Prior	FY 2003				FY 2004				FY 2005				FY 2006			
		1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
In	365	14	15	18	17	3	4	4	4	3	4	4	4				
Out	365	14	15	18	17	3	4	4	4	3	4	4	4				

	FY 2007				FY 2008				FY 2009				To Complete	TOTAL	
	1	2	3	4	1	2	3	4	1	2	3	4			
In															
Out															

Exhibit P-3a	INDIVIDUAL MODIFICATION																				
MODIFICATION TITLE:	<u>AN/APG-73 RADAR UPGRADE (RUG) PHASE I &amp; RUG PHASE II (OSIP 38-94)</u>										TYPE MODIFICATION: <u>CAPABILITY IMPROVEMENT</u>										
MODELS OF SYSTEM AFFECTED:	<u>F/A-18C/D</u>																				
DESCRIPTION/JUSTIFICATION:																					
<p>The F/A-18 radar (AN/APG-65), requires an upgrade to improve electronic counter-countermeasure (ECCM) performance against improved threat electronic countermeasures (ECM). This threat ECM improvement has partially resulted from compromises in the F/A-18 radar performance against various threat electronic warfare systems. The AN/APG-73 radar follows and capitalizes on AN/APG-70 and AN/APG-71 developmental and value engineering programs to maximize shop replaceable assembly (SRA) commonality. ORD # 199-05-88 (Radar Upgrade Phase I) and ORD # 022-05-83 (Radar Upgrade Phase II).</p>																					
DEVELOPMENT STATUS/MAJOR DEVELOPMENT MILESTONES:																					
<p>Forward fit of the AN/APG-73 was incorporated into Lot 16 (Block 43) and subsequent aircraft. Rug Phase I was approved for full rate production of retrofit units in September 1996. This OSIP reflects retrofit of Lot 13 through Lot 16 (Block 42) aircraft. A Pre-planned Product Improvement (P3I) Phase II to the RUG program developed improved hardware and software for an all-weather Reconnaissance (RECCE) strip map mode. Additional modes can be incorporated with software changes as required in the future. Development of RUG Phase II completed in FY 1998 and retrofit procurements began in FY 1999.</p>																					
FINANCIAL PLAN (TOA, \$ in Millions):																					
	Prior Years		FY 2003		FY 2004		FY 2005		FY 2006		FY 2007		FY 2008		FY 2009		To Complete		TOTAL		
	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	
RDT&E (0204136N/E2065)		293.0		4.1																	297.1
PROCUREMENT																					
Installation Kits																					
ECP 508 / RUG - Phase I Kit	58	103.0																		58	103.0
ECP 569 / RUG - Phase II Kit	32	12.3	2	0.7																34	13.1
Installation Kits N/R		5.6																			5.6
ECP 508 / RUG - Phase I Kit																					
ECP 569 / RUG - Phase II Kit																					
Installation Equipment																					
ECP 508 / RUG - Phase I Equip																					
ECP 569 / RUG - Phase II Equip																					
Installation Equipment N/R		2.2																			2.2
Engineering Change Orders																					
Data																					
Training Equipment																					
Support Equipment		4.1																			4.1
ILS		11.3		3.2		0.2															14.7
Other Support																					
Interim Contractor Support																					
Installation Cost	44	0.8	7	0.2	7	0.1														58	1.1
<b>TOTAL PROCUREMENT</b>		139.3		4.1		0.3															143.7

Notes:

- Totals may not add due to rounding
- Asterisk indicates amount less than \$50K

Exhibit P-3a

MODELS OF SYSTEMS AFFECTED: F/A-18C/D MODIFICATION TITLE: AN/APG-73 RADAR UPGRADE (RUG) PHASE I & RUG PHASE II (OSIP 38-94)

METHOD OF IMPLEMENTATION: Phase I kits are Depot Level; Phase II kits are Organization level. Schedule below reflect RUG Phase I installs only.

ADMINISTRATIVE LEADTIME: 4 Months PRODUCTION LEADTIME: 18 Months

CONTRACT DATES: FY 2003: \_\_\_\_\_ FY 2004: \_\_\_\_\_ FY 2005: \_\_\_\_\_

DELIVERY DATE: FY 2003: \_\_\_\_\_ FY 2004: \_\_\_\_\_ FY 2005: \_\_\_\_\_

(\$ in Millions)

Cost:	Prior Years		FY 2003		FY 2004		FY 2005		FY 2006		FY 2007		FY 2008		FY 2009		To Complete		TOTAL	
	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$
FY 2002 & PY (58) kits	44	0.8	7	0.2	7	0.1													58	1.1
FY 2003 ( 0 ) kits																				
FY 2004 ( 0 ) kits																				
FY 2005 ( 0 ) kits																				
FY 2006 ( 0 ) kits																				
FY 2007 ( 0 ) kits																				
FY 2008 ( 0 ) kits																				
FY 2009 ( 0 ) kits																				
To Complete ( 0 ) kits																				
<b>TOTAL</b>	44	0.8	7	0.2	7	0.1													58	1.1

(\$ in Millions)

Installation Schedule

	FY 2002 & Prior	FY 2003				FY 2004				FY 2005				FY 2006					
		1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4		
In	44	0	0	3	4	4	3	0	0	0	0	0	0	0	0	0	0	0	0
Out	44	0	0	3	4	4	3	0	0	0	0	0	0	0	0	0	0	0	0

	FY 2007				FY 2008				FY 2009				To Complete	TOTAL	
	1	2	3	4	1	2	3	4	1	2	3	4			
In	0	0	0	0	0	0	0	0	0	0	0	0	0	0	58
Out	0	0	0	0	0	0	0	0	0	0	0	0	0	58	

INDIVIDUAL MODIFICATION

Exhibit P-3a

MODIFICATION TITLE: POSITIVE IDENTIFICATION SYSTEM (OSIP 12-96)

MODELS OF SYSTEM AFFECTED: F/A-18C/D TYPE MODIFICATION: CAPABILITY IMPROVEMENT

DESCRIPTION/JUSTIFICATION:  
 The Positive Identification System (PIDS) will allow the F/A-18 to positively identify another aircraft. The requirement for positive identification of enemy and friendly aircraft arose from Desert Storm lessons learned and is a CNO high priority issue. Although Lot applicability is back to Lot X, FYDP funding represents an affordable plan. ORD # 446-88-96

DEVELOPMENT STATUS/MAJOR DEVELOPMENT MILESTONES:  
 Forward fit of the PIDS (CIT) for the F/A-18 began in FY 1995 with the last block of Lot 19 aircraft. Retrofit kit procurement started in FY1996. Val/Ver kits were installed in FY98. Kit installation began in FY99. PIDS (CIT) had a successful OPEVAL with Software Configuration Set (SCS) 13C.

FINANCIAL PLAN (TOA, \$ in Millions):

	Prior Years		FY 2003		FY 2004		FY 2005		FY 2006		FY 2007		FY 2008		FY 2009		To Complete		TOTAL		
	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	
RDT&E		89.7																			89.7
PROCUREMENT																					
Installation Kits																					
Lot X through XIX Kit	90	27.9															436	150.4	526	178.4	
Lot XX through XXI Kit																					
Installation Kits N/R		7.0																			7.0
Installation Equipment (Note 1)																					
Lot X through XIX Kit																					
Lot XX through XXI Kit																					
Installation Equipment N/R																					
Engineering Change Orders																					
Data		1.2																			1.2
Training Equipment		2.7																			2.7
Support Equipment		5.4																			5.4
ILS		2.2		*		*															2.3
Other Support																					
Interim Contractor Support																					
Installation Cost	56	4.8	17	1.5	17	1.5											436	40.5	526	48.4	
<b>TOTAL PROCUREMENT</b>		51.2		1.5		1.5												436	191.0	526	245.2

- Notes:  
 1. Totals may not add due to rounding  
 2. Asterisk indicates amount less than \$50K

**Exhibit P-3a**

MODELS OF SYSTEMS AFFECTED: F/A-18C/D MODIFICATION TITLE: POSITIVE IDENTIFICATION SYSTEM (OSIP 12-96)

INSTALLATION INFORMATION:

METHOD OF IMPLEMENTATION: DEPOT LEVEL

ADMINISTRATIVE LEADTIME: 6 Months PRODUCTION LEADTIME: 18 Months

CONTRACT DATES: FY 2003: \_\_\_\_\_ FY 2004: \_\_\_\_\_ FY 2005: \_\_\_\_\_

DELIVERY DATE: FY 2003: \_\_\_\_\_ FY 2004: \_\_\_\_\_ FY 2005: \_\_\_\_\_

(\$ in Millions)

Cost:	Prior Years		FY 2003		FY 2004		FY 2005		FY 2006		FY 2007		FY 2008		FY 2009		To Complete		TOTAL		
	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	
FY 2002 & PY ( 90 ) kits	56	4.8	17	1.5	17	1.5														90	7.8
FY 2003 ( 0 ) kits																					
FY 2004 ( 0 ) kits																					
FY 2005 ( 0 ) kits																					
FY 2006 ( 0 ) kits																					
FY 2007 ( 0 ) kits																					
FY 2008 ( 0 ) kits																					
FY 2009 ( 0 ) kits																					
To Complete ( 436 ) kits																	436	40.5	436	40.5	
<b>TOTAL</b>	<b>56</b>	<b>4.8</b>	<b>17</b>	<b>1.5</b>	<b>17</b>	<b>1.5</b>											<b>436</b>	<b>40.5</b>	<b>526</b>	<b>48.4</b>	

Installation Schedule

	FY 2002 & Prior	FY 2003				FY 2004				FY 2005				FY 2006					
		1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4		
In	56	4	4	4	5	4	4	4	5	0	0	0	0	0	0	0	0	0	0
Out	56	4	4	4	5	4	4	4	5	0	0	0	0	0	0	0	0	0	0

	FY 2007				FY 2008				FY 2009				To Complete	TOTAL	
	1	2	3	4	1	2	3	4	1	2	3	4			
In	0	0	0	0	0	0	0	0	0	0	0	0	0	436	526
Out	0	0	0	0	0	0	0	0	0	0	0	0	0	436	526

Exhibit P-3a	INDIVIDUAL MODIFICATION																				
MODIFICATION TITLE:	<b>F/A-18 ADVANCED TACTICAL AIRBORNE RECONNAISSANCE SYSTEM (ATARS) (OSIP 3-97)</b>																				
MODELS OF SYSTEM AFFECTED:	<b>F/A-18D(RC)</b>								TYPE MODIFICATION: <b>OPERATIONAL UPGRADE</b>												
DESCRIPTION/JUSTIFICATION:																					
<p>The need for a modern reconnaissance capability for the Navy and Marine Corps was clearly demonstrated during Operation Desert Shield/Desert Storm. Specific deficiencies noted were: poor connectivity with coalition forces, no wide-area standoff or all weather reconnaissance, and insufficient quantities of reconnaissance platforms. Lessons learned emphasized the value of timely imagery intelligence to support the tactical commander's concept of operations. In order to provide low to medium altitude, day/night, penetrating under-the weather overflight imagery to meet the Operational Requirement for the Navy and Marine Corps, the Navy is capitalizing on the work accomplished in the former ATARS Program and is leveraging the Air Force investment in ATARS to develop an ATARS-based Tactical Reconnaissance System for the F/A-18. Since system delivery, a need has arisen to upgrade the current recording system to a Digital Solid State Recorder. A Congressional add in FY 2004 provided funding for procurement of 6 recorders.</p>																					
DEVELOPMENT STATUS/MAJOR DEVELOPMENT MILESTONES:																					
<p>An engineering change to the F/A-18 which would allow internal carriage of reconnaissance sensors was incorporated in production via ECP-206 in the F/A-18D starting with FY 1992 procured aircraft. All subsequently procured F/A-18Ds contained the reconnaissance modifications in their baseline configuration. Development of the Advanced Tactical Airborne Reconnaissance System (ATARS) began in 1988 with the Air Force as the lead service. ATARS was developed as a common reconnaissance system for use by the Air Force, Navy, and Marine Corps in both manned and unmanned platforms. The Air Force and the ATARS prime contractor mutually agreed to a cessation of effort on the ATARS contract in June 1993, and the Navy/Marine Corps assumed program leadership in August 1993. A go-ahead decision to procure four(4) LRIP-1 ATARS systems in February 1997 and six (6) LRIP-2 units and four Datalink pods in March 1998. An Early Operational Capability (EOC) was approved in May 1999 leading to a deployment of the system to Kosovo. Formal OPEVAL began in September 1999 leading to a Milestone III decision in July 2000 for Full Rate Production. NAVAIR ECP-549, allowed for the procurement &amp; Installation of the AN/ASD-10(V) ATARS Sensor System Pallet and the AN/ARQ-56 Data Link Pod, and resulted in AFC-244 (an "O" Level Change), and AVC-4744 (an "O" Level Change). These changes have been approved and implemented. NAVAIR North Island submitted ECP-960, a depot level modification to the F/A-18 SUU-62 Centerline Pylon to enable carriage of the AN/ARQ-56 ATARS Data Link Pod. This ECP resulted in a need for additional funding in FY 2002 through FY 2004. Since system delivery, a need has arisen to upgrade the current recording system to a Digital Solid State Recorder. Congress added \$11.9M in FY 2003 to integrate this capability into the F/A-18D ATARS capable aircraft. This development is scheduled to be completed in FY 2005.</p>																					
FINANCIAL PLAN (TOA, \$ in Millions):																					
	Prior Years		FY 2003		FY 2004		FY 2005		FY 2006		FY 2007		FY 2008		FY 2009		To Complete		TOTAL		
	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	
RDT&E		223.4		11.5																	234.9
PROCUREMENT																					
Installation Kits																					
Suites, DL, Ground Stations	39	159.5																	39	159.5	
Solid State Recorders					6	3.9											12	8.4	18	12.3	
Installation Kits N/R		33.8																			33.8
Installation Equipment																					
Installation Equipment N/R																					
Engineering Change Orders		2.0		*		*															2.0
Data																					
Training Equipment		0.2																			0.2
Support Equipment		8.3																	1.8		10.1
ILS		13.6																	1.8		15.4
Other Support		22.1				0.3															22.4
Interim Contractor Support		1.0																			1.0
Installation Cost																					
<b>TOTAL PROCUREMENT</b>		240.4		*		4.2													12.0		256.7
Notes:																					
1. Totals may not add due to rounding																					
2. Asterisk indicates amount less than \$50K																					
<b>INSTALL KIT COMPONENTS BREAKOUT:</b>																					
	FY97	FY98	FY99	FY00	FY01																
ATARS SUITES	4	6	4	5	0																
DATA LINK PODS	0	4	0	0	9																
SQUADRON GROUND STATIONS	1	2	4	0	0																

Exhibit P-3a	INDIVIDUAL MODIFICATION																			
MODIFICATION TITLE:	<b>DIGITAL COMMUNICATIONS SYSTEM (DCS) (OSIP 10-99)</b>																			
MODELS OF SYSTEM AFFECTED:	<b>F/A-18 C/D (Lots 10-21)</b>							TYPE MODIFICATION: <b>CAPABILITY IMPROVEMENT</b>												
DESCRIPTION/JUSTIFICATION:																				
<p>The Digital Communications System (DCS) consists of an upgraded AN/ARC-210 Receiver Transmitter (RT) [with embedded digital message transfer capability and embedded Communications Security (COMSEC)] installed in the F/A-18 and integrated with the F/A-18 weapons system [mission computer, controls &amp; displays, and communication subsystem]. The DCS utilizes preformatted messages to communicate with standard USMC, USA, and USAF digital communications devices to facilitate Close Air Support (CAS), Deep Air Strike (DAS), and Tactical Air Control (TAC) missions. DCS reduces voice communications requirements which tend to be slow, inaccurate, and susceptible to Meaconing, Interference, Jamming, and Intrusion (MIJI). DCS will enhance mission effectiveness by decreasing pilot workload which allows the pilot more time to counter increased threat capabilities. ORD# 486-88-98.</p>																				
DEVELOPMENT STATUS/MAJOR DEVELOPMENT MILESTONES:																				
<p>The AN/ARC-210 RT is being upgraded to a DCS RT. Initial Engineering Developmental Model (EMD) was delivered (using RDT&amp;E,N resources) in FY1998 as scheduled. The F/A-18C/D requirements will be satisfied by retrofitting DCS into Lot X through Lot XXI. Functionality was provided in the Operational Flight Program (OFP) 15C fleet release in FY2000. Initial procurement of installation kits was awarded May 1999. F/A-18C/D Lots X and XI require an AC1 and DCS radio. DCS radios are purchased through OSIP 04-94 (PMA-209). "B" Kits (Radios) purchased in FY02 and FY03 through this OSIP are to balance total inventory of radios to installation kits. OSIP 04-94 is purchasing 20 Install A kits in FY05 and 40 Install A kits in FY06. Additional AC1 requirements for increased install provisions are currently funded under OSIP 12-99.</p>																				
FINANCIAL PLAN (TOA, \$ in Millions):																				
	Prior Years		FY 2003		FY 2004		FY 2005		FY 2006		FY 2007		FY 2008		FY 2009		To Complete		TOTAL	
	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$
RDT&E		35.3																		
PROCUREMENT																				
Installation Kits																				
Lot XII through XXI Kit	196	0.6	32	0.1	36	0.1	72	0.2												
Lot X through XI Kit					72	0.5	31	0.3												
Installation Kits N/R		0.6																		
Installation Equipment																				
Lot XII through XXI Kit ("B" Kit)	14	0.7	26	0.9																
Lot X through XI Kit (AC1)			32	2.1	40	2.5	36	2.4												
Installation Equipment N/R																				
Engineering Change Orders							0.6													
Data		*																		
Training Equipment		0.6																		
Support Equipment		0.7				0.2	0.2													
ILS		0.8		0.1		0.2	0.4													
Other Support																				
Interim Contractor Support																				
Installation Cost	57	0.6	58	0.4	56	0.8	57	0.8												
<b>TOTAL PROCUREMENT</b>		4.7		3.7		4.3		4.8												
Notes:																				
1. Totals may not add due to rounding																				
2. Asterisk indicates amount less than \$50K																				
3. "Installations" are 60 greater than "Installation Kit Procurement" due to 60 kits being procured on OSIP 04-94.																				
4. Installation cost varies depending on aircraft configuration and Lot being retrofit.																				

**Exhibit P-3a**

MODELS OF SYSTEMS AFFECTED: F/A-18 C/D (Lots 10-21) MODIFICATION TITLE: DIGITAL COMMUNICATIONS SYSTEM (DCS) (OSIP 10-99)

INSTALLATION INFORMATION:

METHOD OF IMPLEMENTATION: Navy Depot Field Mod Team

ADMINISTRATIVE LEADTIME: 3 Months PRODUCTION LEADTIME: 24 Months

CONTRACT DATES: FY 2003: Mar-03 FY 2004: Jan-04 FY 2005: Jan-05

DELIVERY DATE: FY 2003: Mar-05 FY 2004: Jan-06 FY 2005: Jan-07

(\$ in Millions)

Cost:	Prior Years		FY 2003		FY 2004		FY 2005		FY 2006		FY 2007		FY 2008		FY 2009		To Complete		TOTAL		
	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	
FY 2002 & PY ( 196 ) kits	57	0.6	58	0.4	56	0.8	25	0.4													
FY 2003 ( 32 ) kits							32	0.4													
FY 2004 (108) kits																					
FY 2005 ( 123 ) kits																					
FY 2006 ( 84 ) kits																					
FY 2007																					
FY 2008																					
FY 2009																					
To Complete ( ) kits																					
<b>TOTAL</b>	<b>57</b>	<b>0.6</b>	<b>58</b>	<b>0.4</b>	<b>56</b>	<b>0.8</b>	<b>57</b>	<b>0.8</b>													

NOTE: "Installations" are 60 greater than "Installation Kit Procurement" due to 20 kits in FY05 and 40 kits in FY06 being procured on OSIP 04-94.

Installation Schedule

	FY 2002 & Prior	FY 2003				FY 2004				FY 2005				FY 2006							
		1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4				
In	57	16	16	15	11	18	18	10	10	13	12	16	16								
Out	57	16	16	15	11	18	18	10	10	13	12	16	16								

	FY 2007				FY 2008				FY 2009				To Complete	TOTAL	
	1	2	3	4	1	2	3	4	1	2	3	4			
In															
Out															

INDIVIDUAL MODIFICATION

Exhibit P-3a

MODIFICATION TITLE: F/A-18 AIRCRAFT STRUCTURAL LIFE MANAGEMENT PLAN (SLMP) (OSIP 11-99) CBR+

MODELS OF SYSTEM AFFECTED: F/A-18C/D TYPE MODIFICATION: SAFETY / LIFE EXTENSION

DESCRIPTION/JUSTIFICATION:

Incorporation of structural enhancements and changes is required to attain F/A-18 service life and maintain sufficient aircraft inventory to meet fleet operational requirements through FY2020. Structural enhancements and changes include resolution of discrepancies identified as a result of Structural Test (ST-16) and in-service experience. These enhancements and changes include: modifications to allow the entire airframe to achieve 6,000 spectrum flight hours; modifications to ensure structures currently limited to 78% of design life can achieve 100% life; modifications to ensure landing gear, catapult and arrestment components and associated structure achieve at least 2700 cats/traps; modifications to ensure landing gear and associated structure achieve a total of at least 14,500 landings; to ensure flight control surfaces and associated / attaching components achieve 6,000 spectrum flight hours; to ensure a 30-year service life for primary and secondary structural components of metallic and nonmetallic (composite, polymer, etc) construction. The unacceptable alternative to retrofitting would be the failure to reach full fatigue life for these aircraft and to not correct the structural defects discovered on fatigue test articles. In many cases, the mission capability of the aircraft would be adversely affected in addition to its reduced service life. As a result, aircraft may be prematurely removed from useful service. Center Barrel Replacement Plus (CBR+) is applicable to F/A-18A/Bs as well as to F/A-18C/Ds. Currently F/A-18A/Bs are not in the plan. However, the F/A-18As being retrofitted with upgraded avionics changes may require a service life extension in the future.

DEVELOPMENT STATUS/MAJOR DEVELOPMENT MILESTONES:

Currently all Lot VI through XVII aircraft have 78% life limits without the SLMP modifications to bring them to 100% airframe life. MDA and NGC developed ECP536 retrofit repair to modify these aircraft so they could restore the airframe to full life. ECP 536 was approved and Validation was completed May 2001. NADEP North Island developed ECP904NI (CBR+) which was approved on 27 April 2000. Validation started October 2000 and was completed in August 2001. Verification started August 2001 and was completed June 2002. ECP 536 moved from this OSIP to OSIP 11-84 in FY02.

FINANCIAL PLAN (TOA, \$ in Millions):

	Prior Years		FY 2003		FY 2004		FY 2005		FY 2006		FY 2007		FY 2008		FY 2009		To Complete		TOTAL		
	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	
RDT&E		16.0		3.6																	
PROCUREMENT																					
Installation Kits																					
ECP 904 Part 1	16	14.5	37	26.6	14	12.2	40	32.1													
ECP 904 Part 2	5	3.3	12	8.8			2	1.3													
ECP 904 Part 3			5	1.5	25	8.4	53	17.1													
Installation Kits N/R	3	9.3	2	6.3			1	5.2													
Installation Equipment				0.8		0.3	1.6														
Installation Equipment N/R		0.1		0.1																	
Engineering Change Orders																					
Data		3.5		1.4			0.3														
Training Equipment																					
Support Equipment																					
ILS		3.5		6.4		3.3	9.5														
Other Support																					
Interim Contractor Support																					
Installation Cost	4	4.4	***4	3.2	7	6.4	37	36.1													
<b>TOTAL PROCUREMENT</b>		38.6		55.1		30.7	103.1														

Notes:

- Totals may not add due to rounding.
  - \* ECP536 VAL/VER Kit provided under warranty.
  - \*\* Prior Year VAL/VER Kits: (1) provided under warranty by Boeing and (1) provided by NAVICP on hand assets.
  - \*\*\* Installations slipped one year due to FY01 funding reductions.
- "Installation Kit" Pricing is Quantity Sensitive. FMS procurements in some years also affects unit price.
- ECP 904 Part 2 is required to correct a Root Wing FLE problem and is not required for all aircraft.
- ECP 904 Part 3 is to required fix CAT & TRAP deficiencies. It is not required for all aircraft.

**Exhibit P-3a**

MODELS OF SYSTEMS AFFECTED: F/A-18C/D MODIFICATION TITLE: F/A-18 SERVICE LIFE MANAGEMENT PROGRAM (SLMP) (OSIP 11-99) CBR+

INSTALLATION INFORMATION: CONTRACTOR PROVIDING 1 WARRANTY KIT

METHOD OF IMPLEMENTATION: ONE KIT INSTALLED BY CONTRACTOR FOR VAL/VER, OTHER INSTALLS BY DEPOT

ADMINISTRATIVE LEADTIME: 3 Months PRODUCTION LEADTIME: 24 Months

CONTRACT DATES: FY 2003: Jan-03 FY 2004: Jan-04 FY 2005: Jan-05

DELIVERY DATE: FY 2003: Jan-05 FY 2004: Jan-06 FY 2005: Jan-07

(\$ in Millions)

Cost:	Prior Years		FY 2003		FY 2004		FY 2005		FY 2006		FY 2007		FY 2008		FY 2009		To Complete		TOTAL		
	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	
FY 2002 & PY ( 15 ) kits	4	4.4	4	3.2	7	6.4															
IN WARRANTY ( 1 ) kit	1																				
FY 2003 ( 37 ) kits							37	36.1													
FY 2004 ( 14 ) kits																					
FY 2005 ( 40 ) kits																					
FY 2006 ( 37 ) kits																					
FY 2007 ( 31 ) kits																					
FY 2008 ( 21 ) kits																					
FY 2009 ( 20 ) kits																					
To Complete ( 139 ) kits																					
<b>TOTAL</b>	<b>5</b>	<b>4.4</b>	<b>4</b>	<b>3.2</b>	<b>7</b>	<b>6.4</b>	<b>37</b>	<b>36.1</b>													

Installation Schedule

	FY 2002 & Prior	FY 2003				FY 2004				FY 2005				FY 2006			
		1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
In	5	1	1	1	1	1	2	2	2	8	9	10	10				
Out	3	1	0	1	1	1	1	1	1	0	2	2	2				

	FY 2007				FY 2008				FY 2009				To Complete	TOTAL	
	1	2	3	4	1	2	3	4	1	2	3	4			
In															
Out															

**Exhibit P-3a** **INDIVIDUAL MODIFICATION**

MODIFICATION TITLE: **MULTI-FUNCTIONAL INFORMATION DISTRIBUTION SYSTEM (MIDS) (12-99)**

MODELS OF SYSTEM AFFECTED: **F/A-18C/D/E/F** TYPE MODIFICATION: **CAPABILITY IMPROVEMENT**

DESCRIPTION/JUSTIFICATION:  
 The system is Tactical Data Link Communications to provide a secure communications and navigation system. MIDS is a Pre-planned Product Improvement (P3I) to the Joint Tactical Information System (JTIDS) and will be installed in USN/USMC F/A-18 aircraft as the primary U.S. platform, since the aircraft can not accommodate the larger JTIDS Class 2 Terminals due to size and weight constraints. MIDS LVT is an International Cooperative Program (ICP) development with France, Germany, Italy, and Spain. A PMOU and Supplement 1 is in effect. The system will be interoperable with JTIDS Class 2 Terminals utilized by NATO allies as well as the other Services. F/A-18 will be interoperable with all Link 16 equipped platforms in U.S. and Allied Nations. This OSIP will also be used to perform efforts to address parts obsolescence and to examine potential MIDS-related capability upgrades associated with Network Centric Operations and interoperability requirements. ORD # 337-06-93

DEVELOPMENT STATUS/MAJOR DEVELOPMENT MILESTONES:  
 This OSIP is planned for incorporation of MIDS into F/A-18C/D (Lots 12-21) and F/A-18E/F (Lots 22-26). A MIDS installation kit Critical Design Review (CDR) was held at Boeing in September 1996. MIDS Terminal initial Engineering and Manufacturing Development (E&MD) delivery for F/A-18 occurred in February 1998. Installation into the first three (3) EMD aircraft began in March 1998 and ended in September 1998. In May 1999, Boeing was awarded the ECP contracts required to provision the F/A-18E/F for the MIDS LVT while still in production. These provisions include: an Interference Blanking Unit (IBU); an Amplifier Control Intercommunication Unit (ACI); a MIDS Compatible CIT upgrade; and a MIDS Compatible Transponder upgrade. This list of equipment was also required to be retrofitted into F/A-18C/D and is included as the "Avionics Upgrade" in the table below. These provisions are required by other F/A-18 programs and can be installed independently of MIDS LVT. OPEVAL was completed in June 2003, with a recommendation of operationally effective and operationally not suitable. A Verification Correction of Deficiencies (VCD) was completed on 15 August 2003. The VCD report delivered on 4 September 2003 recommended full fleet release. Full Rate Production approval was granted on 25 September 2003.

FINANCIAL PLAN (TOA, \$ in Millions):

	Prior Years		FY 2003		FY 2004		FY 2005		FY 2006		FY 2007		FY 2008		FY 2009		To Complete		TOTAL		
	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	
RDT&E		26.5		3.0		0.4		0.9													
PROCUREMENT																					
Installation Kits																					
Lot 12 through 21 Kits	136	22.4	48	7.8	48	7.7	48	7.7													
Lot 10 through 11 Kits																					
Installation Kits N/R																					
Installation Equipment																					
Avionics Upgrade	136	23.9	48	8.5	48	8.4	48	8.4													
MIDS LVT	147	50.4	25	7.1	65	18.8	72	21.2													
Installation Equipment N/R		37.2																			
Engineering Change Orders								0.5													
Data		0.8		0.6																	
Training Equipment																					
Support Equipment		2.0		0.9		0.7		0.9													
ILS		3.2		1.7		0.9		1.1													
Other Support		7.7		5.8		5.5		4.3													
Interim Contractor Support																					
Installation Cost	38	4.9	56	5.6	42	4.2	48	4.8													
<b>TOTAL PROCUREMENT</b>		<b>152.6</b>		<b>37.9</b>		<b>46.2</b>		<b>46.8</b>													

- Notes:
1. Totals may not add due to rounding
  2. Asterisk indicates amount less than \$50K
  3. "A" Kits and Avionics Upgrade continue to be procured and MIDS installations continue on the C/D's to maintain schedule.
  4. 12 Installations kits and Avionics Upgrades, plus 23 MIDS LVT procured through DERF(\$11.5M), in FY02. Installation will be accomplished through budgeted FY04 installation cost.
  5. 173 MIDS LVTs planned for Lot 22 - 26 E/F (provisioned in production) and 40 planned for DT & OT.
  6. Production Engineering (w/ SPAWAR) scheduled to pay share of FSE support and associated Fleet Standup and deployment Issues (Other Support).

**Exhibit P-3a**

MODELS OF SYSTEMS AFFECTED: F/A-18C/D/E/F MODIFICATION TITLE: MULTI-FUNCTIONAL INFORMATION DISTRIBUTION SYSTEM (MIDS) (12-99)

INSTALLATION INFORMATION:

METHOD OF IMPLEMENTATION: DEPOT LEVEL

ADMINISTRATIVE LEADTIME: 5 Months PRODUCTION LEADTIME: 18 Months

CONTRACT DATES: FY 2003: Mar-03 FY 2004: Mar-04 FY 2005: Mar-05

DELIVERY DATE: FY 2003: Sep-04 FY 2004: Sep-05 FY 2005: Sep-06

(\$ in Millions)

Cost:	Prior Years		FY 2003		FY 2004		FY 2005		FY 2006		FY 2007		FY 2008		FY 2009		To Complete		TOTAL	
	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$
FY 2002 & PY ( 136 ) kits	38	4.9	56	5.6	42	4.2	48	4.8												
FY 2003 ( 48 ) kits																				
FY 2004 ( 48 ) kits																				
FY 2005 ( 48 ) kits																				
FY 2006 ( 48 ) kits																				
FY 2007 ( 48 ) kits																				
FY 2008 (48) kits																				
FY 2009 ( 0 ) kits																				
To Complete ( 0 ) kits																				
<b>TOTAL</b>	<b>38</b>	<b>4.9</b>	<b>56</b>	<b>5.6</b>	<b>42</b>	<b>4.2</b>	<b>48</b>	<b>4.8</b>												

\*Note: DERF funded "A" kit procurement.  
Installation Schedule

	FY 2002 & Prior	FY 2003				FY 2004				FY 2005				FY 2006					
		1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4		
In	38	13	13	15	15	15	15	6	6	12	12	12	12						
Out	38	13	13	15	15	15	15	6	6	12	12	12	12						

	FY 2007				FY 2008				FY 2009				To Complete	TOTAL
	1	2	3	4	1	2	3	4	1	2	3	4		
In														
Out														

Exhibit P-3a

INDIVIDUAL MODIFICATION

MODIFICATION TITLE: F/A-18C/D/E/F NACES P3I (Navy Aircrew Common Ejection Seat Pre-Planned Product Improvement) (OSIP 20-99)

MODELS OF SYSTEM AFFECTED: F/A-18C/D/E/F NACES EJECTION SEATS TYPE MODIFICATION: SAFETY

DESCRIPTION/JUSTIFICATION:

An average of 15 Naval Aircrew fatalities occur each year from in-flight mishaps. Nearly half result from the seat ejecting aircrew into the ground or water at low altitude and adverse attitude. Congressional direction to increase U.S. Navy aircrew anthropometric range to more closely match the general aircrew population. This change will increase anthropometric range from the current 135lbs through 213lbs to 100lbs through 245lbs. The NACES P3I program is divided into three phases of development and upon completion of each phase, existing aircraft seats will be modified with retrofit kits to provide the increased capability to the NACES seat: Phase I - Current technology improvements to increase cockpit accommodation and reduce injury risk for all aircrew. Phase II - Propulsion stability control to reduce the risk of major injury to less than 5% up to 600 knots. Phase III - Stability control and surface avoidance capability for low altitudes, adverse altitudes, and out-of-control ejections.

DEVELOPMENT STATUS/MAJOR DEVELOPMENT MILESTONES:

ECP MB6004 was approved 19 May 1999.

FINANCIAL PLAN (TOA, \$ in Millions):

	Prior Years		FY 2003		FY 2004		FY 2005		FY 2006		FY 2007		FY 2008		FY 2009		To Complete		TOTAL		
	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	
RDT&E																					
PROCUREMENT																					
Installation Kits	376	9.9	64	2.5													104	3.1	544	15.5	
Installation Kits N/R		1.5																			1.5
Installation Equipment																					
Installation Equipment N/R																					
Engineering Change Orders																					
Data		0.2																			0.2
Training Equipment	12	0.3																	12	0.3	
Support Equipment		0.2																			0.2
ILS		1.4		0.2																	1.7
Other Support																					
Interim Contractor Support																					
Installation Cost	376	0.3	64	0.1													104	0.4	544	0.7	
<b>TOTAL PROCUREMENT</b>		13.8		2.8														3.5			20.1

Notes:

1. Totals may not add due to rounding
2. Asterisk indicates amount less than \$50K

**Exhibit P-3a**

MODELS OF SYSTEMS AFFECTED: F/A-18C/D/E/F NACES EJECTION SEATS MODIFICATION TITLE: F/A-18 C/D/E/F NACES P3I (OSIP 20-99)

INSTALLATION INFORMATION: \_\_\_\_\_

METHOD OF IMPLEMENTATION: Contractor Modification Team

ADMINISTRATIVE LEADTIME: 6 Months PRODUCTION LEADTIME: 2 Months

CONTRACT DATES: FY 2003: Apr-03 FY 2004: \_\_\_\_\_ FY 2005: \_\_\_\_\_ FY 2006: \_\_\_\_\_

DELIVERY DATE: FY 2003: Jun-03 FY 2004: \_\_\_\_\_ FY 2005: \_\_\_\_\_ FY 2006: \_\_\_\_\_

(\$ in Millions)

Cost:	Prior Years		FY 2003		FY 2004		FY 2005		FY 2006		FY 2007		FY 2008		FY 2009		To Complete		TOTAL			
	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$		
FY 2002 & Prior ( 376 ) kits	376	0.3																			376	0.3
FY 2003 ( 64 ) kits			64	0.1																	64	0.1
FY 2004 ( ) kits																						
FY 2005 ( ) kits																						
FY 2006 ( ) kits																						
FY 2007 ( ) kits																						
FY 2008 ( ) kits																						
FY 2009 ( ) kits																						
To Complete ( 104 ) kits																					104	0.4
<b>TOTAL</b>	<b>376</b>	<b>0.3</b>	<b>64</b>	<b>0.1</b>																	<b>104</b>	<b>0.4</b>

Installation Schedule

	FY 2002 & Prior	FY 2003				FY 2004				FY 2005				FY 2006							
		1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4				
In	376	0	0	32	32	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Out	376	0	0	32	32	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

	FY 2007				FY 2008				FY 2009				To Complete	TOTAL	
	1	2	3	4	1	2	3	4	1	2	3	4			
In	0	0	0	0	0	0	0	0	0	0	0	0	0	104	544
Out	0	0	0	0	0	0	0	0	0	0	0	0	0	104	544

**Exhibit P-3a** **INDIVIDUAL MODIFICATION**

MODIFICATION TITLE: **USMC F/A-18 UPGRADE ECP-583 (OSIP 21-00)**

MODELS OF SYSTEM AFFECTED: **F/A-18A/B/C** TYPE MODIFICATION: **AVIONICS UPGRADE**

DESCRIPTION/JUSTIFICATION:  
 This OSIP upgrades USMC F/A-18A/B/Cs (Lots 7-11) to a capability level comparable to a Lot 17 F/A-18C, including both hardware and software capabilities. This requirement is critical to meet the Marine Corps requirements for the Tactical Air Integration Plan. The Avionics Upgrade includes new avionics subsystems already incorporated or in process of being incorporated into USMC and/or FMS F/A-18 aircraft. This ECP incorporates the following subsystems in ECP 583R1: AN/ARC-210(V) with HAVEQUICK II and SINGARS; Digital Communication Systems (DCS) Receiver/Transmitter (RT-1824(C)); Combined Interrogator/Transponder AN/APX-111 (V); Night Vision Display System (NVDS); Mission Computer CP-2360 (XN-8); Radar (AN/APG-73); Stores Management Set (SMS) (AN/AYQ-9); AMRAAM Capability (radar mod, launchers, weapons pylons and control stick); Digital Display Indicator (DDI) Upgrade; Mission Data Loader (AN/ASQ-215); Targeting FLIR provisions (AAS-38B). ECP583R1 adds a digital wingtip modification, allowing use of the AIM-9X air-to-air missile. Starting in FY 2007, ECP583R2 will add the following capabilities: MDS(LVT); Color Displays; JHMCS; ALE-47; TAMMAC; and AMU.  
 This OSIP also provides for limited integration of the Litening Enhanced Range FLIR on 12 USMC F/A-18Ds. This will allow the Marine Corps to utilize existing Litening pods, currently in the AV-8B inventory, on USMC F/A-18Ds to provide the Air Ground Task Force capability and flexibility in the execution of operations in the combat spectrum.

DEVELOPMENT STATUS/MAJOR DEVELOPMENT MILESTONES:  
 While the number of aircraft to be retrofitted in the program of record has not changed, the Marine Corps will now retrofit some early lot F/A-18C/Ds vice only F/A-18As due to greater remaining life on those aircraft. ECP 583 was approved 25 March 1999. ECP 583R1 was approved in August 2001. All the equipment being incorporated in this ECP has completed development. This OSIP includes a \$24.5M Congressional Add in FY 2004

A New Start notification was sent to the Congress in FY 2003 to initiate the Litening integration and procurement of the FY 2004 Installation Kits.

FINANCIAL PLAN (TOA, \$ in Millions):

	Prior Years		FY 2003		FY 2004		FY 2005		FY 2006		FY 2007		FY 2008		FY 2009		To Complete		TOTAL		
	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	
RDT&E																					
PROCUREMENT																					
Installation Kits																					
ECP 583	18	6.0	3	1.1	6	2.4	4	1.6													
ECP 583R1	76	0.3			6	*	4	*													
ECP 583R2																					
Litening					12	2.0															
Installation Kits N/R		0.7		0.7		1.9		0.3													
Installation Equipment		127.9		13.4		37.3		15.5													
Installation Equipment N/R																					
Engineering Change Orders																					
Data		0.3						0.2													
Training		0.5		0.2																	
Other Support (Testing)		1.9		0.2																	
Support Equipment		1.4																			
ILS		5.6		6.3		6.3		2.2													
Interim Contractor Support																					
Installation Cost	30	12.7	16	6.6	18	1.2	3	0.0													
<b>TOTAL PROCUREMENT</b>		<b>157.3</b>		<b>28.4</b>		<b>51.1</b>		<b>19.9</b>													

- Notes:
- Totals may not add due to rounding
  - Asterisk indicates amount less than \$50K
  - 34 "Installation Kits" were purchased with NGRE Funds to include: 4 Val/Vers - FY98; 20 "A" Kits - FY99; and 10 "A" Kits - FY00. The cost of these kits are not displayed in this OSIP.
  - The "Installation" unit costs for FY 2002 through FY 2005 are scewed by Congressional adds. The 6 installs in FY2004 are funded with FY 2002 Congressional add funding and the 3 installs in FY 2005 are funded with FY 2003 Congressional add funding.
  - Beginning in FY 2009 "Installation Costs" are for installation of ECP 583R2.
  - The additional ECP583R1 kits are being procured to retrofit Navy Reserve aircraft already modified to an ECP 583 configuration under an OSIP that is no longer active.

**Exhibit P-3a**

MODELS OF SYSTEMS AFFECTED: F/A-18A/B/C MODIFICATION TITLE: USMC F/A-18 UPGRADE ECP-583 (OSIP 21-00) (ECP583 and ECP 583R2)

INSTALLATION INFORMATION:

METHOD OF IMPLEMENTATION: (ECP 583) ONE KIT INSTALLED BY CONTRACTOR FOR VAL/VER, OTHER INSTALLS FIELD TEAMS

ADMINISTRATIVE LEAD-TIME: 4 Months PRODUCTION LEAD-TIME: 24 Months

CONTRACT DATES: FY 2003: Mar-03 FY 2004: Jan-04 FY 2005: Jan-05

DELIVERY DATE: FY 2003: Mar-05 FY 2004: Jan-06 FY 2005: Jan-07

METHOD OF IMPLEMENTATION: (LITENING) ONE KIT INSTALLED BY CONTRACTOR FOR VAL/VER, OTHER INSTALLS FIELD TEAMS

ADMINISTRATIVE LEAD-TIME: 2 Months PRODUCTION LEAD-TIME: 4 Months

CONTRACT DATES: FY 2003: \_\_\_\_\_ FY 2004: Feb-04 FY 2005: \_\_\_\_\_

DELIVERY DATE: FY 2003: \_\_\_\_\_ FY 2004: Jun-04 FY 2005: \_\_\_\_\_

(\$ in Millions)

Cost:	Prior Years		FY 2003		FY 2004		FY 2005		FY 2006		FY 2007		FY 2008		FY 2009		To Complete		TOTAL	
	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$
FY 2002 & PY ( 52 ) kits <sup>1,2</sup>	30	12.7	16	6.6	6	0.0														
FY 2003 ( 3 ) kits <sup>3</sup>							3	0.0												
FY 2004 ( 18 ) kits <sup>4</sup>					12	1.2														
FY 2005 ( 4 ) kits																				
FY 2006 ( 11 ) kits																				
FY 2007 (24) kits <sup>5</sup>																				
FY 2008 (6) kits																				
FY 2009 ( ) kits																				
To Complete ( 46 ) kits																				
<b>TOTAL</b>	<b>30</b>	<b>6.0</b>	<b>16</b>	<b>6.6</b>	<b>18</b>	<b>1.2</b>	<b>3</b>	<b>0.0</b>												

**Notes:**

1. 34 "Installation Kits" were purchased with NGRE funds, not included in this OSIP.
2. FY04 Installations are funded with FY02 Congressional add funding.
3. FY05 installations are funded with FY03 Congressional add funding.
4. FY04 installations are for Litening. FY06 installations are for ECP 583.
5. FY09 and later installations are for ECP 583R2.

FY 2002 & Prior	FY 2003				FY 2004				FY 2005				FY 2006			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
In	30	4	4	4	4	0	0	9	9	0	0	2	1			
Out	30	4	4	4	4	0	0	9	9	0	0	2	1			

	FY 2007				FY 2008				FY 2009				To Complete	TOTAL
	1	2	3	4	1	2	3	4	1	2	3	4		
In														
Out														

**Exhibit P-3a** **INDIVIDUAL MODIFICATION**

MODIFICATION TITLE: **F/A-18 JOINT HELMET-MOUNTED CUEING SYSTEM (JHMCS) (OSIP 24-00)**

MODELS OF SYSTEM AFFECTED: **F/A-18C/D/E/F** TYPE MODIFICATION: **CAPABILITY IMPROVEMENT**

DESCRIPTION/JUSTIFICATION:

The Joint Helmet-Mounted Cueing System (JHMCS) is a multi-service system that provides United States Air Force (USAF), United States Navy (USN), and United States Marine Corp (USMC) aircraft the capability to cue and verify on-board weapons and weapons sensors to a specific azimuth/elevation determined by the pilot's head position and to confirm sensor line-of-sight. The intent is to reduce tasks required of aircrews, verify seeker/sensor position, and enhance weapons employment opportunities. In the air-to-air role, aircrew will be able to cue and verify cueing of off-boresight weapon sensors and weapons (current and future short-range air-to-air missiles) to exploit the full weapons envelopes in the dynamic Within Visual Range (WVR) arena. In the air-to-ground role, this system will enhance lethality and survivability by reducing cockpit "heads down" and target acquisition time. For the strike, strike escort, and force application missions, the JHMCS possesses potential to enhance the flexibility of cueing weapons and sensors in the stressful air-to-ground tactical environment. The JHMCS incorporates an ejection-compatible helmet-mounted display system, with capability to cue and verify cueing of high off-axis sensors and weapons, on USAF and USN single seat and two seat fighter aircraft. The JHMCS includes a flight helmet with display optics, image source, display processor/video hardware and software to drive the display, uplook reticle, magnetic helmet tracker hardware and software, interfaces to the aircraft computers, weapons and sensor hardware, with software to integrate the JHMCS functions with other onboard systems. The JHMCS communicates with airborne sensors (FLIR, RADAR) through the aircraft avionics MUX Bus. It communicates with weapons through the armament MUX Bus via the Stores Management System.

DEVELOPMENT STATUS/MAJOR DEVELOPMENT MILESTONES:

F/A-18E/F JHMCS completed Developmental Testing in August 2001. Operational Test (OPEVAL) began in September 2001 and was completed in April 2002. The FY 2000 APN-5 funding was used for production Non-recurring engineering and tooling. The first F/A-18C/D JHMCS retrofit kits will be procured in FY 2004 and installed in FY 2005. F/A-18E/F retrofit kit procurement begins in **FY 2004**, to be installed in **FY 2005** starting with Lot 23 aircraft.

FINANCIAL PLAN (TOA, \$ in Millions):

	Prior Years		FY 2003		FY 2004		FY 2005		FY 2006		FY2007		FY2008		FY2009		To Complete		TOTAL		
	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	
RDT&E		31.3		23.2		24.6		12.7													
PROCUREMENT																					
Installation Kits																					
C/D					36	4.1	54	6.3													
E/F					14	1.6															
Installation Kits N/R		1.8		4.8		0.4															
Installation Equipment																					
C/D					36	8.7	54	13.3													
E/F					14	3.4															
Installation Equipment N/R																					
Engineering Change Orders																					
Data				*		0.1															
Training																					
Support Equipment				0.8		1.4		0.5													
ILS				0.8		3.8		2.1													
Spares																					
Other Support - Testing																					
Installation Cost							50	5.0													
<b>TOTAL PROCUREMENT</b>		1.8		6.4		23.4		27.1													

- Notes:
1. Totals may not add due to rounding
  2. Asterisk indicates amount less than \$50K
  3. Unit Cost Increase in FY05 is due to increased costs for procurement of Aft Seat JMCS

**Exhibit P-3a**

MODELS OF SYSTEMS AFFECTED: F/A-18C/D/E/F MODIFICATION TITLE: F/A-18 JOINT HELMET-MOUNTED CUEING SYSTEM (JHMCS) (OSIP 24-00)

INSTALLATION INFORMATION: APPROX 5 KITS INSTALLED EVERY 4 WEEKS

METHOD OF IMPLEMENTATION: FIELD MOD TEAMS

ADMINISTRATIVE LEAD-TIME: 2 Months PRODUCTION LEAD-TIME: 12 Months

CONTRACT DATES: FY 2003: \_\_\_\_\_ FY 2004: Feb-04 FY 2005: Dec-04

DELIVERY DATE: FY 2003: \_\_\_\_\_ FY 2004: Feb-05 FY 2005: Dec-05

(\$ in Millions)

Cost:	Prior Years		FY 2003		FY 2004		FY 2005		FY2006		FY2007		FY2008		FY2009		To Complete		TOTAL		
	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	
FY 2002 & PY ( ) kits																					
FY 2003 ( ) kits																					
FY 2004 (50) kits							50	5.0													
FY 2005 (54) kits																					
FY 2006 (72) kits																					
FY 2007 (50) kits																					
FY 2008 (47) kits																					
FY 2009 (52) kits																					
To Complete (273) kits																					
<b>TOTAL</b>							50	5.0													

Installation Schedule

	FY 2002 & Prior	FY 2003				FY 2004				FY 2005				FY2006							
		1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4				
In	0	0	0	0	0	0	0	0	0	0	16	17	17								
Out	0	0	0	0	0	0	0	0	0	0	16	17	17								

	FY2007				FY2008				FY2009				To Complete	TOTAL	
	1	2	3	4	1	2	3	4	1	2	3	4			
In															
Out															

INDIVIDUAL MODIFICATION

**Exhibit P-3a**

MODIFICATION TITLE: ADVANCED TARGETING FORWARD LOOKING INFRARED (ATFLIR) (OSIP 12-01)

MODELS OF SYSTEM AFFECTED: F/A-18A+/C/D/E/F TYPE MODIFICATION: CAPABILITY IMPROVEMENTS

DESCRIPTION/JUSTIFICATION:  
 The Advanced Targeting FLIR (ORD# 437-88-96) will provide the F/A-18A+/C/D with a significantly enhanced capability to detect, track, and attack air and ground targets. New laser guided and GPS standoff weapon systems, and higher altitude attack profiles, require improved performance over the current AAS-38/46 Targeting FLIR. The ATFLIR is designed to provide a quantum leap in operational effectiveness to fully support the standoff precision strike mission. Improved reliability and maintainability technology will increase operational availability while reducing life cycle costs. This OSIP will also be used to perform efforts to address parts obsolescence and to examine potential ATFLIR-related capability upgrades associated with Network Centric Operations and interoperability requirements.

DEVELOPMENT STATUS/MAJOR DEVELOPMENT MILESTONES:  
 ATFLIR development began in FY1997. The E&MD contract was awarded in March, 1998. Preliminary Design Review, Critical Design Review, and TECHEVAL have been completed. OPEVAL testing was completed June 2003 and the OPEVAL report was issued 4 September 2003 to support Full Rate Production decision in October 2003. An FOT&E period is planned in 2004 to test functionality on the F/A-18C/D with OFP 17C.

FINANCIAL PLAN (TOA, \$ in Millions):

	Prior Years		FY 2003		FY 2004		FY 2005		FY 2006		FY2007		FY2008		FY2009		To Complete		TOTAL		
	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	
RDT&E		262.5		13.1																	
PROCUREMENT																					
Installation Kits			495	1.5	148	0.7															
Installation Kits N/R																					
Installation Equipment(C/D)	10	36.7	15	43.2	31	78.3	37	84.0													
Installation Equipment(E/F)																					
Installation Equipment N/R		*		30.0																	
Engineering Change Orders																					
Data		1.5		0.7		0.8		1.6													
Training		1.6		1.3		1.4		1.1													
Support Equipment		4.0		3.8		10.8		8.9													
ILS		8.5		5.4		10.2		5.8													
Spares																					
Other Support - Testing						0.2															
Installation Cost					50	0.8	120	1.8													
<b>TOTAL PROCUREMENT</b>		52.4		85.9		103.1		103.2													

Notes:  
 1. Totals may not add due to rounding  
 2. Asterisk indicates amount less than \$50K  
 3. 8 "A Kits" used for Validation/Verification will not be installed on aircraft.  
 4. The "Installation Kit" is required to allow Advanced NAVFLIR functionality on cockpit displays. This ECP is required for F/A-18A+ and all F/A-18C/Ds.

**Exhibit P-3a**

MODELS OF SYSTEMS AFFECTED: F/A-18A+C/D/E/F MODIFICATION TITLE: ADVANCED TARGETING FORWARD LOOKING INFRARED (ATFLIR) (OSIP 12-01)

INSTALLATION INFORMATION:

METHOD OF IMPLEMENTATION: DEPOT LEVEL MODIFICATION USING FIELD MOD TEAMS

ADMINISTRATIVE LEAD-TIME: \_\_\_\_\_ Months PRODUCTION LEAD-TIME: \_\_\_\_\_ Months

CONTRACT DATES: FY 2003: Sep-03 FY 2004: Jun-04 FY 2005: \_\_\_\_\_

DELIVERY DATE: FY 2003: Mar-04 FY 2004: Dec-04 FY 2005: \_\_\_\_\_

(\$ in Millions)

Cost:	Prior Years		FY 2003		FY 2004		FY 2005		FY2006		FY2007		FY2008		FY2009		To Complete		TOTAL		
	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	
FY 2002 & PY ( ) kits																					
FY 2003 (495) kits					50	0.8	120	1.8													
FY 2004 (148) kits																					
FY 2005 ( ) kits																					
FY 2006 ( ) kits																					
FY 2007 ( ) kits																					
FY 2008 ( ) kits																					
FY 2009 ( ) kits																					
To Complete ( ) kits																					
<b>TOTAL</b>	0	0.0	0	0.0	50	0.8	120	1.8													

Installation Schedule

	FY 2002 & Prior	FY 2003				FY 2004				FY 2005				FY 2006			
		1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
In	0	0	0	0	0	0	0	25	25	30	30	30	30				
Out	0	0	0	0	0	0	0	25	25	30	30	30	30				

	FY 2007				FY 2008				FY 2009				To Complete	TOTAL
	1	2	3	4	1	2	3	4	1	2	3	4		
In														
Out														

Exhibit P-3a		INDIVIDUAL MODIFICATION	
MODIFICATION TITLE:	<u>E/F 2000 HR CORRECTION OF DISCREPANCIES (OSIP 19-01)</u>		
MODELS OF SYSTEM AFFECTED:	<u>F/A-18E/F</u>	TYPE MODIFICATION:	<u>SAFETY /RELIABILITY/IMPROVEMENT</u>
DESCRIPTION/JUSTIFICATION:			
<p>Corrections to discrepancies up to 2000 Flight Hours identified during testing and development can sometimes be incorporated into production aircraft, effective with the physical configuration audit which establishes the product baseline of the aircraft. However, when this cannot be done due to time constraints, retrofit of the changes into already delivered aircraft requires funding through the Aircraft Modification Program. Additionally, deficiencies discovered during fleet operations must be corrected. The unacceptable alternative to retrofitting would be multiple configurations in the fleet, which will create maintenance and supply problems, and in many cases the mission capability of the aircraft would be adversely affected as well as reduced service life. Corrections to the following items/conditions are required to meet transition plan and achieve planned life limits of LRIP 1-3 and FRP 1 and 2 aircraft:</p>			
<p>TEF, ALL, &amp; ALL Shroud Hinges, (ECP-6035 PT1)</p> <p>Drag Angle, (ECP-6136)</p> <p>Idle Hinge, NLG R/H Forward Door (ECP-6032)</p> <p>Strut Door Attach Former @ Y520, (ECP-6057)</p> <p>Drive Hinge, NLG R/H Forward Door, (ECP-6137)</p> <p>Y541 Fitting Repair Crack, (ECP-6111)</p> <p>ECS Primary Heat Exchanger, (ECP-6078)</p> <p>LEX Diverter Apex Fitting @ Y383, (ECP-6041)</p> <p>MLG Sidebrace Pin, (ECP-6099)</p> <p>Heat Exchanger Cover (Door 55) Hole Wear, (ECP-6086)</p> <p>Outer Wing Substructure, Hinge kit &amp; Wing Torque Box kit, (ECP-6035 PT2)</p> <p>Ecology Tank Flange Changes, (ECP-6100)</p> <p>Center Keel Intercoaster @ Y627, (ECP-6092)</p> <p>Fuel Floor Support Angle @ Y470, (ECP-6128)</p> <p>Inlet Duct Stiffener, (ECP-6094)</p> <p>Keel Access Cover @ Y631-Y645, (ECP-6118)</p> <p>Upper Keel Web Stringer @ Y659, (ECP-6067)</p> <p>Keel Web Fittings Aft of Y472, (ECP-6127)</p> <p>Visual Identification System (ECP-6052)</p> <p>AOA/PITOT Probe Circuitry Change &amp; Boarding Ladder/Canopy Switch, (ECP-6165)</p> <p>Keel Web, (ECP-XXXX)</p>	<p>Replace hinges on trailing edge flap, aileron and aileron shroud with redesigned hinges to prevent potential departure of flight control surfaces in flight.</p> <p>Install redesigned wing drag angle to correct acoustic vibration related fatigue failures.</p> <p>Retrofit redesigned hinge to restore component to its original specification.</p> <p>Replace with redesigned hinge and clevis, and install bushing into Y520 former to restore component to its original specification.</p> <p>Incorporate redesigned drive hinge to prevent potential departure of component in flight.</p> <p>Splice redesigned lower appendage area into Y541 former to restore component to original specification.</p> <p>Replace noncompliant heat exchanger with redesigned full life component and new ECS duct.</p> <p>Retrofit with redesigned apex fitting to restore component to its original specification.</p> <p>Fit MLG with redesigned pin to prevent possible collapse of MLG during arrestments.</p> <p>Retrofit fasteners with steel bushings to prevent distribution of stress into fuselage components.</p> <p>Remove noncompliant TEF and aileron hinges on wing torque box and replace with full life hinges.</p> <p>Incorporate redesigned ecology tank and modify mount on the door to prevent tank separation.</p> <p>Replace component to restore aircraft to original structural integrity.</p> <p>Add titanium bathtub fittings and replace fuel floor to increase fuel floor land area.</p> <p>Remove &amp; replace with new design Inlet Duct Stiffener to correct design deficiency.</p> <p>Replace Keel Web with redesigned component to conform to original aircraft specification.</p> <p>Install doublers to restore component to its original service life.</p> <p>Install doublers to restore component to its original service life.</p> <p>Provide Pattern Strobe Light System and Circuit Logic Change cues to distinguish E/F from C/D at night.</p> <p>Retrofit redesigned AOA Probe Circuitry to prevent potential safety hazard and relocation of boarding ladder switch to preclude inadvertent actuation of the canopy switch, resulting in the possible closing of aircraft canopy on personnel.</p> <p>Replace Keel Web with redesigned component to conform to original aircraft specification.</p>		
DEVELOPMENT STATUS/MAJOR DEVELOPMENT MILESTONES:			
<p>Each change has been or will be tested prior to installation in the F/A-18.</p> <p>Some ECPs are "O" Level Installs</p>			

**Exhibit P-3a** **INDIVIDUAL MODIFICATION**

MODIFICATION TITLE: **E/F 2000 HR CORRECTION OF DISCREPANCIES (OSIP 19-01)**

MODELS OF SYSTEM AFFECTED: **F/A-18E/F** TYPE MODIFICATION: **SAFETY /RELIABILITY/IMPROVEMENT**

FINANCIAL PLAN (TOA, \$ in Millions):

	Prior Years		FY 2003		FY 2004		FY 2005		FY 2006		FY 2007		FY 2008		FY 2009		To Complete		TOTAL		
	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	
<b>RD&amp;E</b>																					
<b>PROCUREMENT</b>																					
Installation Kits																					
ECP 6035PT1/ TEF, AIL, & AIL Shroud Hinges	12	3.4																			
ECP 6136 / Drag Angle	12	0.2																			
ECP 6032 / Idle Hinge, NLG R/H Forward Door	12	*																			
ECP 6057 / Strut Door Attach Former @ Y520	12	0.3																			
ECP 6137 / Drive Hinge, NLG R/H Forward Door	12	*	62	0.2	36	0.1	25	0.1													
ECP 6111 / Y541 Fitting Repair Crack	72	2.8	7	0.3																	
ECP 6078 / ECS Primary Heat Exchanger					48	4.9	8	0.8													
ECP 6041 / LEX Diverter Apex Fitting @ Y383	12	0.3																			
ECP 6099 / MLG Sidebrace Pin			12	*																	
ECP 6086 / Heat Exchanger Cover (Door 55) Hole Wear	12	*																			
ECP 6035PT2 / Outer Wing Substructure, Hinge kit & Wing Torque Box kit	38	0.6	62	3.1																	
ECP 6100 / Ecology Tank Flange Changes	27	0.4																			
ECP 6092 / Center Keel Intercoaster @ Y627	12	0.2																			
ECP 6128 / Fuel Floor Support Angle @ Y470	36	0.4	36	0.4	19	0.2															
ECP 6094 / Inlet Duct Stiffener	9	0.1																			
ECP 6118 / Keel Access Cover @ Y631-Y645			62	0.6	36	0.3	30	0.3													
ECP 6067 / Upper Keel Web Stringer @ Y659	12	0.1	34	0.3																	
ECP 6127 / Keel Web Fitting Aft @ Y472	36	0.4	36	0.4	7	0.1															
ECP 6052 / Visual Identification System			32	2.1																	
ECP 6165 /AOA PITOT Probe Circuitry Change & Boarding Ladder/Canopy Switch	72	0.1			36	*	27	*													
ECP XXX7 / Keel Web									30	0.2											
Installation Kits N/R		8.4		6.4		1.0		0.3													
Installation Equipment																					
Installation Equipment N/R																					
Engineering Change Orders																					
Data		0.5		0.4		0.2		*													
Training Equipment																					
Support Equipment																					
ILS		0.9		0.7		0.6		0.5													
Other Support																					
Interim Contractor Support																					
Installation Cost	24	0.2	89	0.8	186	3.2	360	3.9													
<b>TOTAL PROCUREMENT</b>		<b>19.3</b>		<b>15.7</b>		<b>10.7</b>		<b>6.2</b>													

- Notes:
- Total may not add due to rounding.
  - Asterisk indicates amount less than \$50K
  - Procurement unit cost for ECP 6035PT2 is dependent of Lot of aircraft being retrofit due to multiple Technical Directives.
  - Update required based on FY02 magr procurement \$2,548K from OSIP 19-01.

Exhibit P-3a		INDIVIDUAL MODIFICATION																		
MODIFICATION TITLE:		<u>F/A-18C/D DIGITAL WINGTIP MOD FOR AIM-9X COMPATIBILITY (OSIP 05-02)</u>																		
MODELS OF SYSTEM AFFECTED:		<u>F/A-18C/D</u>								TYPE MODIFICATION: <u>CAPABILITY UPGRADE</u>										
DESCRIPTION/JUSTIFICATION:																				
<p>The AIM-9X Joint Operation Document (JORD), ORD# USN-CAF (USAF 001-93)-IIA, requires a highly expanded off-boresight targeting capability that presently cannot be achieved with the current AIM-9M analog interface signal set. The JORD also requires the missile to communicate with the aircraft through a digital interface. The F/A-18 currently has a tailored MIL-STD-1760 interface on stations 2 through 8. Modifications to the outer wing panel and LAU-7 launcher can provide full digital capability to the wingtip and can support full AIM-9X capability. The current launcher support equipment (AWM-100) must also be modified to support/test this digital wingtip capability. AWM-100 are "O" level installations.</p>																				
DEVELOPMENT STATUS/MAJOR DEVELOPMENT MILESTONES:																				
<p>The AIM-9X missile is on contract for LRIP 1, 2 and 3 deliveries, with the LRIP 1 delivery complete. Operational test shots have been completed and an end of test message was issued in August 2003. The AIM-9X program Milestone III (FRP) is scheduled for the 2nd quarter of FY 2004.</p>																				
FINANCIAL PLAN (TOA, \$ in Millions):																				
	Prior Years		FY 2003		FY 2004		FY 2005		FY 2006		FY 2007		FY 2008		FY 2009		To Complete		TOTAL	
	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$
RDT&E																				
PROCUREMENT																				
Installation Kits																				
F/A-18 Digital Wingtip Kits	88	0.1	82	0.1	42	0.1	25	*												
Installation Kits N/R	2	0.3		*		*		*												
Installation Equipment																				
Installation Equipment N/R																				
Engineering Change Orders																				
Data		0.4																		
Training																				
Support Equipment		0.7		*		*		*												
ILS		*		*		*		*												
Spares																				
Other Support - Testing																				
Installation Cost			88	0.5	82	0.5	42	0.3												
<b>TOTAL PROCUREMENT</b>		1.6		0.8		0.6		0.3												
Notes:																				
1. Totals may not add due to rounding																				
2. Asterisk indicates amount less than \$50K																				

**Exhibit P-3a**

MODELS OF SYSTEMS AFFECTED: F/A-18C/D MODIFICATION TITLE: F/A-18C/D DIGITAL WINGTIP MOD FOR AIM-9X COMPATIBILITY (OSIP 05-02)

INSTALLATION INFORMATION: \_\_\_\_\_

METHOD OF IMPLEMENTATION: D-Level Install for Digital Wingtip Mod with Field Mod Teams, O-Level Install for AWM-100

ADMINISTRATIVE LEAD-TIME: 2 Months PRODUCTION LEAD-TIME: 12 Months

CONTRACT DATES: FY 2003: Dec-02 FY 2004: Dec-03 FY 2005: Dec-04

DELIVERY DATE: FY 2003: Dec-03 FY 2004: Dec-04 FY 2005: Dec-05

(\$ in Millions)

Cost:	Prior Years		FY 2003		FY 2004		FY 2005		FY2006		FY2007		FY2008		FY2009		To Complete		TOTAL		
	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	
FY 2002 & PY ( 88 ) kits			88	0.5																	
FY 2003 ( 82 ) kits					82	0.5															
FY 2004 ( 42 ) kits							42	0.3													
FY 2005 ( 25 ) kits																					
FY 2006 ( 29 ) kits																					
FY 2007 ( 4 ) kits																					
FY 2008 ( 65 ) kits																					
FY 2009 ( 20 ) kits																					
To Complete ( 45 ) kits																					
<b>TOTAL</b>			88	0.5	82	0.5	42	0.3													

Installation Schedule

FY 2002 & Prior	FY 2003				FY 2004				FY 2005				FY2006				
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	
In	0	18	19	19	32	18	22	22	20	10	10	11	11				
Out	0	18	19	19	32	18	22	22	20	10	10	11	11				

In	FY2007				FY2008				FY2009				To Complete	TOTAL	
	1	2	3	4	1	2	3	4	1	2	3	4			
Out															

Exhibit P-3a	INDIVIDUAL MODIFICATION																				
MODIFICATION TITLE:	<u>C/D TRAINING SYSTEM (OSIP 06-02)</u>																				
MODELS OF SYSTEM AFFECTED:	<u>F/A-18C/D</u>									TYPE MODIFICATION: <u>TRAINERS UPGRADE</u>											
DESCRIPTION/JUSTIFICATION:																					
F/A-18C/D training funds will be used to meet current Fleet Readiness Squadron (FRS) requirements by purchasing new components and software to prevent obsolescence of the various trainers as F/A-18C/D aircraft are modified for capability enhancement and service life extension. Funding will also be used to update courseware and computer based training (CBT) as new capabilities are introduced to the fleet, and will enable the fleet to institute an aggressive post-FRS training environment to bring F/A-18C/D trainers into High Level Architecture (HLA) compliance.																					
DEVELOPMENT STATUS/MAJOR DEVELOPMENT MILESTONES:																					
FINANCIAL PLAN (TOA, \$ in Millions):																					
	Prior Years		FY 2003		FY 2004		FY 2005		FY 2006		FY2007		FY2008		FY2009		o Complete		TOTAL		
	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	
RDT&E																					
PROCUREMENT																					
Installation Kits																					
Installation Kits N/R																					
Installation Equipment																					
Installation Equipment N/R																					
Engineering Change Orders																					
Data																					
Training		4.8		37.4				13.9													
Support Equipment																					
ILS																					
Spares																					
Other Support - Testing																					
Installation Cost																					
<b>TOTAL PROCUREMENT</b>		4.8		37.4				13.9													
Notes:																					
1. Totals may not add due to rounding																					
2. Asterisk indicates amount less than \$50K																					

Exhibit P-3a	INDIVIDUAL MODIFICATION																			
MODIFICATION TITLE:	<b>Fast Tactical Imagery II (OSIP 15-02) FTI</b>										TYPE MODIFICATION: <b>CAPABILITY IMPROVEMENT</b>									
MODELS OF SYSTEM AFFECTED:	<b>F/A-18C/DE/F</b>																			
DESCRIPTION/JUSTIFICATION:																				
<p>FTI provides the aircrew the capability to link video imagery and targeting coordinates from aircraft to aircraft at limited cost. This capability is currently being used by the F-14 to transmit critical targeting imagery and coordinates from aircraft to aircraft. This Congressionally added funding would be used to fully qualify the FTI capability on the F/A-18, and to provide this critical warfighting capability to the Fleet as F-14s are being retired from carriers. The Fleet completed a successful demonstration of the FTI capability on the F/A-18C aircraft last year, and thus, this effort is considered low risk.</p> <p>Tactical imagery continues to be critical to ongoing conflicts. FTI provides the capability to transmit this imagery from aircraft to aircraft, or to a ground receiving station. This allows quick and easy dissemination of imagery to aircraft or ground stations after it is collected. This also provides the fleet the capability to target mobile targets. Without FTI on F/A-18 aircraft, the Battle Group Commander lost this critical capability in FY03 when F-14s left the Fleet. As such, his ability to transmit and disseminate imagery, and to target mobile targets were severely diminished. A fiscal year 2004 Congressional Add for \$1.0M provides for procurement and installation for one (1) F/A-18 squadron.</p>																				
DEVELOPMENT STATUS/MAJOR DEVELOPMENT MILESTONES:																				
Deliver Preproduction Units(3) Sep 30 2002 Complete Carrier Qual Testing Dec 30 2002																				
FINANCIAL PLAN (TOA, \$ in Millions):																				
	Prior Years		FY 2003		FY 2004		FY 2005		FY 2006		FY 2007		FY 2008		FY 2009		To Complete		TOTAL	
	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$
RD1&E (0204136N/E2065)																				
PROCUREMENT																				
Installation Kits	3	2.1			12	0.4													15	2.5
Installation Kits N/R																				
Installation Equipment																				
Installation Kits N/R																				
Installation Equipment N/R																				
Engineering Change Orders						0.1														0.1
Data																				
Training Equipment																				
Support Equipment						0.1														0.1
ILS						0.2														0.2
Other Support		0.4				*														0.4
Interim Contractor Support																				
Installation Cost					12	0.2													12	0.2
<b>TOTAL PROCUREMENT</b>		<b>2.5</b>				<b>1.0</b>														<b>3.5</b>
Notes:																				
1. Totals may not add due to rounding																				
2. Asterisk indicates amount less than \$50K																				
3. FY04 installs are funded with FY 2004 Congressional Add funding.																				

Exhibit P-3a		INDIVIDUAL MODIFICATION	
MODIFICATION TITLE:	<b>E/F 4000 HR CORRECTION OF DISCREPANCIES (OSIP 12-03)</b>		
MODELS OF SYSTEM AFFECTED:	<b>F/A-18E/F</b>	TYPE MODIFICATION:	<b>SAFETY /RELIABILITY/IMPROVEMENT</b>
DESCRIPTION/JUSTIFICATION:			
<p>Corrections to discrepancies up to 4000 Flight Hours identified during testing and development can sometimes be incorporated into production aircraft, effective with the physical configuration audit which establishes the product baseline of the aircraft. However, when this cannot be done due to time constraints, retrofit of the changes into already delivered aircraft requires funding through the Aircraft Modification Program. Additionally, deficiencies discovered during fleet operations must be corrected. The unacceptable alternative to retrofitting would be multiple configurations in the fleet, which will create maintenance and supply problems, and in many cases the mission capability of the aircraft would be adversely affected as well as reduced service life. Corrections to the following items/conditions are required to meet transition plan and achieve planned life limits of LRIP II / III and FRP I/II aircraft.</p>			
<p>LEX Cracks Redesign, (ECP-6126)                      Bootstrap at Several Locations (After Interim Fix), (ECP-6029)                      Dorsal Cover (Door 40) Hole Elongation, (ECP-6085)                      Door 317 Hole Elongation, (ECP-6120)                      Side Longeron Web @ Y510 (ECP-6129)                      Aft Fuselage Inboard Former Crack @ Y618, (ECP-6135)                      LEX Doors – Upper Center &amp; Aft, (ECP-6009)                      Lower Outboard Longeron @ Y555, (ECP-6141)                      Inlet Duct Stiffener @ Y568, (ECP-6143)                      Y472.5 Blkd Fatigue Crks @ MLG Trunion, (ECP-6157)                      Missile Launcher Bay Clost Out Web, (ECP-6142)                      Lower Outboard Longeron Cracks, (ECP-6138)</p>	<p>Replace 50% of intermediate Spar; add bathtub fittings 4 locations; replace rib to restore aircraft to design life                      Replace bootstrap and Y645 Outboard Former with redesigned components to meet specification life                      Incorporate redesigned door to prevent potential departure of component in flight                      Incorporate redesigned door to prevent potential departure of component in flight                      Remove and replace Longeron Web with thicker web to restore component to its original specification.                      Replace stringer, upper / lower keel webs and stiffener to restore aircraft to original structural integrity                      Install door with thicker lands and thicker hat stiffeners end to correct acoustic vibration related fatigue                      Cold work nutplate holes and add clip to correct design deficiency                      Installation of a structural clip to the shroud in order to prevent buckling                      Blend bulkhead to prevent distribution of stress into components. (Installation costs only)                      Install doublers to restore component to its original service life                      Brings structure back to original specification by adding a doubler to the structure</p>		
DEVELOPMENT STATUS/MAJOR DEVELOPMENT MILESTONES:			
<p>Each change has been or will be tested prior to installation in the F/A-18.                      Some ECPs are "O" Level Installs</p>			

Exhibit P-3a		INDIVIDUAL MODIFICATION																		
MODIFICATION TITLE:		<b>E/F 4000 HR CORRECTION OF DISCREPANCIES (OSIP 12-03)</b>																		
MODELS OF SYSTEM AFFECTED:		<b>F/A-18E/F</b>									TYPE MODIFICATION: <b>SAFETY /RELIABILITY/IMPROVEMENT</b>									
FINANCIAL PLAN (TOA, \$ in Millions):																				
	Prior Years		FY 2003		FY 2004		FY 2005		FY 2006		FY 2007		FY 2008		FY 2009		To Complete		TOTAL	
	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$
<b>RDT&amp;E</b>																				
<b>PROCUREMENT</b>																				
Installation Kits																				
			62	2.1	34	0.5														
					4	0.7	10	1.8												
			36	1.6	17	0.8														
			62	1.4	17	0.4														
			62	*	25	*														
			62	0.3	36	0.1	30	0.1												
			32	0.5																
					36	0.2	36	0.2												
			62	*	36	0.0	30	*												
					36	0.2	36	0.2												
			62	*																
				2.3	1.6	1.0														
Installation Equipment																				
Installation Equipment N/R																				
Engineering Change Orders																				
			0.6		*	0.1														
Training Equipment																				
Support Equipment																				
			0.1		0.9	0.6														
Other Support																				
Interim Contractor Support																				
					81	1.0	488	6.1												
				8.9	6.4	10.2														
<b>TOTAL PROCUREMENT</b>																				

- Notes:
1. Totals may not add due to rounding.
  2. Asterisk indicates amount less than \$50K.
  3. Total quantity of installations exceeds the "Installation Kit" procurement quantity by 82 due to ECP 6157, which does not require an "Installation kit" to complete the modification.
  4. ECP 6126 includes multiple airframe changes with different pricing dependent on aircraft Lot.

<b>Exhibit P-3a</b>	<b>INDIVIDUAL MODIFICATION</b>		
<b>MODIFICATION TITLE:</b>	<b><u>E/F 6000 HR CORRECTION OF DISCREPANCIES (OSIP 13-03)</u></b>		
<b>MODELS OF SYSTEM AFFECTED:</b>	<b><u>F/A-18E/F</u></b>	<b>TYPE MODIFICATION:</b>	<b><u>SAFETY /RELIABILITY/IMPROVEMENT</u></b>
<b>DESCRIPTION/JUSTIFICATION:</b>			
<p>Corrections to discrepancies up to 6000 FHs identified during testing and development can sometimes be incorporated into production aircraft, effective with the physical configuration audit which establishes the product baseline of the aircraft. However, when this cannot be done due to time constraints, retrofit of the changes into already delivered aircraft requires funding through the Aircraft Modification Program. Additionally, deficiencies discovered during fleet operations must be corrected. The unacceptable alternative to retrofiting would be multiple configurations in the fleet, which will create maintenance and supply problems, and in many cases the mission capability of the aircraft would be adversely affected as well as reduced service life. Corrections to the following items/conditions are required to meet transition plan and achieve planned life limits of LRIP II / III and FRP I / II aircraft:</p>			
<p>Y577 Frame Flange @ Door 55, <b><u>(ECP-6154)</u></b>                  12K SFH Y461 Clip Crack, <b><u>(ECP-6144)</u></b>                  Y591 Bulkhead Stiffener Fillet Crack, <b><u>(ECP-6160)</u></b>                  Keel Longerons @ Y555 Former, <b><u>(ECP-6117)</u></b>                  Outboard Longerons Splice Fasteners @ Y591, <b><u>(ECP-6119)</u></b>                  Upper Outboard Longerons @ Y631, <b><u>(ECP-6124)</u></b>                  Nacelle Skin Failed Fastener @ Y694, <b><u>(ECP-6107)</u></b>                  Y679 Former Fasteners, <b><u>(ECP-6123)</u></b>                  Y604 UOB Long, <b><u>(ECP-6134)</u></b>                  Missile Beam Web, Aft of Y541, <b><u>(ECP-6132)</u></b></p>	<p>Add bathtub fitting to restore aircraft to original structural integrity                  Replace fatigued clip with a redesigned clip to meet design life                  Add nested fitting to restore aircraft to original structural integrity                  Add structural backup to former to meet specification life                  Remove and replace splice fitting and fasteners to restore aircraft to original structural integrity                  Remove and replace hi-lok fastener to restore aircraft to original structural integrity                  Replace fastener with oversize fastener to correct design deficiency                  Replace with new material fastener to restore aircraft to original structural integrity                  Blend away material from downstanding leg to prevent distribution of stress                  Add doubler to restore component to its original service life</p>		
<b>DEVELOPMENT STATUS/MAJOR DEVELOPMENT MILESTONES:</b>			
Each change has been or will be tested prior to installation in the F/A-18.			

		Prior Years		FY 2003		FY 2004		FY 2005		FY 2006		FY 2007		FY 2008		FY 2009		To Complete		TOTAL	
		Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$
<b>Exhibit P-3a</b>																					
<b>INDIVIDUAL MODIFICATION</b>																					
MODIFICATION TITLE:		<b>E/F 6000 HR CORRECTION OF DISCREPANCIES (OSIP 13-03)</b>																			
MODELS OF SYSTEM AFFECTED:		<b>F/A-18E/F</b>										TYPE MODIFICATION: <b>SAFETY /RELIABILITY/IMPROVEMENT</b>									
FINANCIAL PLAN (TOA, \$ in Millions):																					
RD&E																					
PROCUREMENT																					
Installation Kits																					
ECP 6154 / Y577 Frame Finge @ Door 55				62	*	36	*	19	*												
ECP 6144 / 12K SFH Y461 Clip Crack				62	0.1	36	0.1	30	0.1												
ECP 6160 / Y591 Bulkhead Stiffner Fillet Crack				62	0.2	36	0.1	30	0.1												
ECP 6117 / Keel Longerons @Y555 Former						36	0.4	36	0.4												
ECP 6119 / Outboard Longeron Splice Fasteners @ Y591																					
ECP 6124 / Upper Outboard Longeron @Y631						28	0.2														
ECP 6107 / Nacelle Skin Failed Fastener @Y694				36	*	11	0.0														
ECP 6123 / Y679 Former Fasteners				63	*																
ECP 6134 / Y604 UOB Long						36	0.3	36	0.3												
ECP 6132 / Missile Beam Web, Aft @Y541				36	0.2	36	0.3	26	0.2												
Installation Kits N/R					0.9		0.6		0.1												
Installation Equipment																					
Installation Equipment N/R																					
Engineering Change Orders																					
Data					0.3		*		*												
Training Equipment																					
Support Equipment																					
ILS					0.1		0.6		0.5												
Other Support																					
Interim Contractor Support																					
Installation Cost						54	0.4	423	3.2												
<b>TOTAL PROCUREMENT</b>					1.8		3.1		4.9												

Notes:  
 1. Total may not add due to rounding.  
 2. Asterisk indicates amount less than \$50K  
 3. "Installation Kit" procurement quantity exceeds "Installation" quantity due to 20 Validation/Verification kits.

Exhibit P-3a	INDIVIDUAL MODIFICATION	
MODIFICATION TITLE:	<b><u>F/F CORRECTION OF OPERATIONAL DISCREPANCIES (OSIP 14-03)</u></b>	
MODELS OF SYSTEM AFFECTED:	<b><u>F/A-18E/F</u></b>	TYPE MODIFICATION: <b><u>SAFETY /RELIABILITY/IMPROVEMENT</u></b>
DESCRIPTION/JUSTIFICATION:		
<p>Corrections to operational discrepancies identified can sometimes be incorporated into production aircraft, effective with the physical configuration audit which establishes the product baseline of the aircraft. However, when this cannot be done due to time constraints, retrofit of the changes into already delivered aircraft requires funding through the Aircraft Modification Program. Additionally, deficiencies discovered during fleet operations must be corrected. The unacceptable alternative to retrofitting would be multiple configurations in the fleet, which will create maintenance and supply problems, and in many cases the mission capability of the aircraft would be adversely affected as well as reduced service life. Corrections to the following items/conditions are required to meet transition plan and achieve planned life limits of LRIP II / III and FRP I / II aircraft:</p>		
<p>ECS Exhaust Overtemp Final Fix/Bard Stacks, (ECP-6106R1)  Aft ECS Cooling Fan, (ECP-6114)  FCC Processor Upgrade, (ECP-6002)  MLG Door Bushing Migration, (ECP-6104)  AFT Fuselage Outbd Former Fwd Flange @ Y645, (ECP-6088)  MLG Trunnion Bearing Loose Retention Nut, (ECP-6194)  Long Stick Position, (ECP-XXX2)  SKIN 12 Stiffener Back-up Structure, (ECP-6171)  AFT Fan Shutoff Valve, (ECP-XXX5)  Radar Altimeter Antenna Radome Delineation, (ECP-XXX8)  Leading Edge Extension (LEX) Lower Surface/Structure Cracks Redesign, (ECP-6193)  MLG Outboard Tire Door Clevis, (ECP-6145)  FT50 Y436 Inlet Former, (ECP-6188)  FT50 teardown Keel Failure, (ECP-XX11)  FT50 Teardown Bulkhead Cracking, (ECP-XX12)  FT-50 Failure of Upper Wing Skin Splice Plate, (ECP-6183)  DOOR 49 Replacement, (ECP-6098)  Horizontal Actuator Cover-Door 71, (ECP-6068)  MLG R/H Upper Planing Link Attach Fitting Failure, (ECP-6196)  LEX Vent Mechanism Support Assembly Rod End Clevis Failure, (ECP-XXX3)  LDS Fuel Wash Filter, (ECP-XX16)  ECS Ejector Cracks, (ECP-XX17)  MLG Door Uplock, (ECP-XX18)  Cockpit Pressure Warning System (CPWS), (ECP-XX19)  DOORS 315 &amp; 316 Elongation, (ECP-XX20)  HOL Follow-On Upgrades Lot 25 &amp; Up, (ECP-XX21)  18E Follow-On Upgrades Lot 24 &amp; Below, (ECP-XX22)  MLG Proximity Switches &amp; Sidebrace Down lock Mechanism, (ECP-6076)</p>	<p>Modifies current exhaust ducts in order to reduce skin and structural temperatures caused by the ECS exhaust plume  Strengthens ECS cooling fan to prevent and contain fan failures  Replace existing FCC processor with upgraded higher order processors  Improved bushing retention for MLG Door hinge attach points  Repair former by adding a doubler to bring it back to original specification  Replacing bearing retention nut with an improved retention nut  Incorporation of improved retention mechanism in position sensor  Strengthen the Centerline Structure to meet 2000 catapult requirement  Modify the Aft Fan with an Improved Shut-Off Valve  Drill hole in door to allow escape of moisture accumulation in order to prevent corrosion of the antenna  Modifies LEX structure to prevent cracks induced from aerodynamic loads  Redesign clevis to eliminate cracking imparted during gear cycling  Introduces strengthened design to prevent cracking  Modifies Keel To Prevent Future Cracking  Modifies bulkhead to prevent cracking discovered during FT50 testing  Redesigned Upper Wing Skin Splice Plate to address failures observed during fatigue testing  Replace Door 49 for holes found elongated beyond spec.  Improved fasteners to prevent deformation introduced by flight loads  Redesign existing link planing link attach fittings  Redesign and strengthen door actuator  Redesign wash filter to prevent passages from becoming clogged and causing loss of cooling efficiency; impacting LCS, Hydraulic, and AMAD life- due to higher operating temps.  Modify ECS ejector to prevent cracks from being induced  Improves Uplock ability to overcome increased loads due to MLG Door icing  Provides a warning system to identify a possible insidious cabin pressure loss that could result in crew hypoxia and possible A/C loss  Reduces the potential for hole elongation on doors 315 &amp; 316.  Mission Computer BIT performance upgrades &amp; enhancements for aircraft with Higher Order Language (HOL)  Mission Computer BIT performance upgrades &amp; enhancements for aircraft without Higher Order Language (HOL)  Modify down lock actuator assembly, jury link; replace lock plate &amp; proximity switches</p>	
DEVELOPMENT STATUS/MAJOR DEVELOPMENT MILESTONES:		
<p>Each change has been or will be tested prior to installation in the F/A-18.  Some ECPs are "O" Level Installs</p>		

**Exhibit P-3a** **INDIVIDUAL MODIFICATION**

MODIFICATION TITLE: **E/F CORRECTION OF OPERATIONAL DISCREPANCIES (OSIP 14-03)**

MODELS OF SYSTEM AFFECTED: **F/A-18E/F** TYPE MODIFICATION: **SAFETY /RELIABILITY/IMPROVEME**

FINANCIAL PLAN (TOA, \$ in Millions): **SAFETY /RELIABILITY/IMPROVEMENT**

	Prior Years		FY 2003		FY 2004		FY 2005		FY 2006		FY 2007		FY 2008		FY 2009		To Complete		TOTAL		
	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	
<b>RDT&amp;E</b>																					
<b>PROCUREMENT</b>																					
Installation Kits																					
ECP 6106R1 / Exhaust Overtemp Final Fix/Bard Stacks			74	4.7	36	2.3	30	2.0													
ECP 6114 / Alt ECS Cooling Fan			12	0.1																	
ECP 6002 / FCC Processor Upgrade			28	1.3																	
ECP 6104 / MLG Door Bushing Migration			32	0.2																	
ECP 6088 / Alt Fuselage Outboard Former Fwd Flange @Y645					12	0.2															
ECP 6194 / MLG Trunnion Bearing Loose Retention Nut					36	0.4	30	0.3													
ECP XXX2 / Long Stick Position Tx					13	0.1															
ECP 6171 / Skin 12 Stiffner Back-up Structure			54	0.1																	
ECP-XXX5 / Alt Fan Shutoff Valve							30	*													
ECP XXX8 / Radar Altimeter Antenna Radome Delimitation							30	0.6													
ECP 6193 Leading Edge Ext (LEX ) Lower Surface/Structure Cracks Redesign					36	2.4	17	1.2													
ECP 6145 / MLG Outboard Tire Door Clevis					36	1.0	30	0.9													
ECP 6188 / Y436 Inlet Former					36	0.1	30	0.1													
ECP XX11 / FT50 Teardown Keel Failure					36	0.9	30	0.8													
ECP XX12 / FT50 Teardown Bulkhead Cracking					36	0.4	30	0.3													
ECP 6183 / FT50 Failure of Upper Wing Skin Splice Plate							30	0.1													
ECP 6098 / DOOR 49 Replacement							12	1.6													
ECP 6068 / Horizontal Actuator Vocer Door 71					62	3.9															
ECP 6196 / MLG R/H Upper Planing Link Attach Fitting Failure							30	0.2													
ECP XXX3 / LEX Vent Mechanism Support Assembly Rod end Clevis Failure					13	0.1	30	0.2													
ECP XX16 / LDS Fuel Wash Filter							30	0.2													
ECP XX17 / ECS Ejector Cracks							30	0.1													
ECP XX18 / MLG Door Uplock							30	0.1													
ECP XX19 / Cockpit Pressure Warning System (CPWS)							30	0.1													
ECP XX20 / DOORS 315 & 316 Elongation							30	*													
ECP XX21 / HOL Follow-on Upgrades Lot 25 & Up							30	0.2													
ECP XX22 / 18E Follow-on upgrades Lot 24 & Below							30	0.2													
ECP 6076 / MLG Proximity Switches & Sidebrace Downlock Mechanism							12	0.1													
Installation Kits N/R				1.7		3.0	4.7														
Installation Equipment																					
Installation Equipment N/R																					
Engineering Change Orders																					
Data				0.2		0.5	0.8														
Training Equipment																					
Support Equipment				0.3		1.0	1.0														
ILS				2.5		3.2	3.3														
Other Support																					
Interim Contractor Support																					
Installation Cost				12	0.2	51	0.7	331	8.1												
<b>TOTAL PROCUREMENT</b>				11.3		20.2	26.9														

- Notes:
- Total may not add due to rounding.
  - Asterisk indicates amount less than \$50K
  - ECP 6194 was listed in previous budgets as ECP XXX1 / MLG Control Valve of Emerg Port Restrictor.
  - ECP 6171 was listed in previous budgets as ECP XXX4 / SUU 78 Back-Up Structure.
  - ECP 6193 was listed in previous budgets as ECP XXX9 / LEX Cracks.
  - ECP 6188 was listed in previous budgets as ECP XXX10 / FT50 Teardown Longeron Repair.
  - "Installation Kit" procurement quantity exceeds "Installation" quantity due to some kits being installed at the Organizational Level.

**Exhibit P-3a** **INDIVIDUAL MODIFICATION**

MODIFICATION TITLE: **MARK XIIA MODE 5 IFF (OSIP 15-03)**

MODELS OF SYSTEM AFFECTED: **VARIOUS (49 Separate T/M/S)** TYPE MODIFICATION: **CAPABILITY IMPROVEMENT**

DESCRIPTION/JUSTIFICATION:  
 MK XII A Mode 5 provides improved secure cooperative combat identification through IFF. MODE 5 is a product improvement which is designed to be installed through engineering changes to digital MK XII interrogators and transponders including the APX-117, APX-118, UPX-37, APX-111, and RT-1832. MODE 5 is designed to be installed in all Navy T/M/S aircraft which are currently MODE 4 IFF capable (49 T/M/S aircraft). MODE 5 is developed in cooperation with NATO. MODE 5 was designated a "JROC special interest" program in March 2001 and is interoperable across all services. ORD # 577-06-01

DEVELOPMENT STATUS/MAJOR DEVELOPMENT MILESTONES:  
 MODE 5 completed a brassboard development in December 1997. Modeling and Simulation to demonstrate interoperability was completed in February of 1998 to support NATO STANAG development. Proof of concept flight testing completed in December 1999. A Preliminary Design Review (PDR) for the proposed ECP to incorporate MODE 5 in the APX-118 was completed in July 2001. Contracts to develop a prototype Cryptographic Module and ECP kit are presently being executed.

FINANCIAL PLAN (TOA, \$ in Millions):

	Prior Years		FY 2003		FY 2004		FY 2005		FY 2006		FY 2007		FY 2008		FY 2009		To Complete		TOTAL	
	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$
RDT&E		10.4		11.0		10.9		5.9												
<b>PROCUREMENT</b>																				
Installation Kits																				
Platform Installation A-Kits																				
Installation Kits N/R																				
Installation Equipment (Note 1)																				
MODE 5 IFF HARDWARE B-KIT																				
Installation Equipment N/R																				
Engineering Change Orders																				
Data																				
Training Equipment																				
Support Equipment				0.9																
ILS																				
Other Support																				
Interim Contractor Support																				
Installation Cost																				
<b>TOTAL PROCUREMENT</b>				0.9																

- Notes:
1. Totals may not add due to rounding
  2. Asterisk indicates amount less than \$50K
  3. FY04 funding for this OSIP resides in BLI 058200: ID Systems.

Exhibit P-3a

INDIVIDUAL MODIFICATION

MODIFICATION TITLE: RESERVE SQUADRON ECP 560 OSIP 08-05

MODELS OF SYSTEM AFFECTED: F/A-18A

TYPE MODIFICATION: AVIONICS UPGRADE

DESCRIPTION/JUSTIFICATION:

Upgrade Avionics for F/A-18A Hornets (Lots 8 and 9) for the U.S. Naval Reserve Force. The Avionics Upgrade includes new avionics subsystems already incorporated or in process of being incorporated into USN/USMC and/or FMS F/A-18 aircraft. This ECP incorporates the following systems: AN/ARC-210(V) with HAVEQUICK II and SINGARS; Digital Communications System (DCS) Receiver Transmitter (RT-1824(C)); Mission Computer CP 2360 (XN-8); Stores Management Set (SMS) (AN/AYQ-9); AMRAAM Capability (radar mod, launchers, weapons pylons and control stick); Digital Display Indicator (DDI) Upgrade; Mission Data Loader (AN/ASQ-215); Targeting FLIR provisions (AAS-38B).

DEVELOPMENT STATUS/MAJOR DEVELOPMENT MILESTONES:

ECP 560 was approved in March 1998. All the equipment being incorporated in this ECP has completed development.

FINANCIAL PLAN (TOA, \$ in Millions):

	Prior Years		FY 2002		FY 2003		FY 2004		FY 2005		FY 2006		FY 2007		FY 2008		FY 2009		To Complete		TOTAL		
	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	
RDT&E																							
PROCUREMENT																							
Installation Kits																							
ECP 560									4	1.6													
Installation Kits N/R																							
Installation Equipment									68	5.8													
Installation Equipment N/R																							
Engineering Change Orders																							
Data																							
Training																							
Other Support (Testing)																							
Support Equipment																							
ILS										0.5													
Interim Contractor Support																							
Installation Cost																							
<b>TOTAL PROCUREMENT</b>										7.9													

Notes:

1. Totals may not add due to rounding
2. Asterisk indicates amount less than \$50K



Exhibit P-40, BUDGET ITEM JUSTIFICATION							DATE: February 2004				
APPROPRIATION/BUDGET ACTIVITY Aircraft Procurement, Navy/APN-5 Aircraft Modifications							P-1 ITEM NOMENCLATURE H-46 Series Helicopter				
Program Element for Code B Items:							Other Related Program Elements				
	Prior Years	ID Code	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	To Complete	Total
QTY		A									
COST (In Millions)	479.9	A	65.3	86.4	71.2	52.0	47.2	5.5		14.8	822.2
<p>This line item funds modifications to the H-46 aircraft. The H-46 is a twin-turbine powered dual-piloted tandem-rotor helicopter. The cabin contains provisions for accommodating 25 troops and crew members. The cabin also contains an integral cargo and rescue system. The overall goal of the modification budget in FY2005 is to keep the H-46 a viable platform until a replacement aircraft can be fielded by upgrading flight critical dynamic components, the engine control system, the electrical system, and the T58-16 engine; installing on-board vibration monitoring equipment; and replacing the existing steel plate armor with lighter weight armor. H-46 helicopters are used by the Marine Corps for troop transport and by the Navy for vertical replenishment of ships. There are currently 250 aircraft (226 active + 24 reserve) in the inventory. USMC: (226) CH-46E + (6) HH-46D; USN: (1) CH-46D + (15) HH-46D + (2) UH-46D. (24) CH-46E's are reserve aircraft. The Navy is in the process of retiring the H-46D inventory as replacement H-60R aircraft are delivered. Original Design Service Life was 10,000 hours. It was subsequently extended to 12,500 hours 18 Dec 1992 and 15,000 hours 16 Feb 1996. Aircraft will continue to be flown past 15,000 flight hours on an Age Exploration program.</p>											
(TOA, \$ in Millions)											
OSIP No.	Description	Prior Years	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	Complete	To Total
25-91	Dynamic Component Upgrade	402.5	2.6	2.1	1.6						408.8
25-97	Safety Improvement Program	14.9	0.9	2.9	1.9	2.1	1.7	1.1		0.2	25.8
28-99	Engine Control System Retrofit	31.5	7.1	6.5	2.1	0.1					47.4
29-99	Electrical System Upgrade	4.4	1.1	1.3	2.6	2.8	2.6	0.3		6.9	21.9
15-01	T-58 Engine Reliability Improv	26.6	48.7	64.7	56.4	42.8	41.6	4.1		4.5	289.5
10-03	Aircraft Integrated Maintenananc		4.9	2.9	6.6	4.2	1.2			3.2	23.0
20-04	Lightweight Armor			6.0							6.0
	<b>Total</b>	<b>479.9</b>	<b>65.3</b>	<b>86.4</b>	<b>71.2</b>	<b>52.0</b>	<b>47.2</b>	<b>5.5</b>		<b>14.8</b>	<b>822.2</b>
<b>Note: Totals may not add due to rounding.</b>											
	H-46 Series Reserves		0.2	0.2	0.2	0.2					

Exhibit P-3a Individual Modification

MODIFICATION TITLE: Dynamic Component Upgrade (OSIP 25-91)

MODELS OF SYSTEMS AFFECTED: H-46 TYPE MODIFICATION: Safety (HONA Category A)

DESCRIPTION/JUSTIFICATION: The H-46 helicopter is nearing the end of its originally planned service life. Several dynamic components failed between 1988 and 1990 due to fatigue. Engineering Change Proposal (ECP)-556 incorporates design improvements to the critical safety items which have been identified by in-service failure and flight strain survey. The changes increase thickness of critical sections and make other specific changes to increase resistance to fatigue damage. The major components include the forward and aft rotor heads, the forward and aft transmissions, the mixbox, aft vertical rotor shaft, the swashplates, synchronizing shafts, and accessory gear box. ECP-558 changes configuration of the Aircraft Flight Control System (AFCS) which reduces flight loads on critical components. The H-46 presently uses the MD-1 and AHRS gyroscopes for pitch and roll rate input to the AFCS. These gyroscopes were originally designed for indication systems only and do not provide adequate input for pitch and roll rate to the AFCS. DCU was directed by Chief of Naval Operations (CNO) letter 13100 serial 504E/OU603293 dated 30 Aug 90 and approved by ASN (RDA) by Program Management Proposal (PMP) 90-7 on 18 Jan 91.

DEVELOPMENT STATUS/MAJOR DEVELOPMENT MILESTONES: The dynamic component fatigue testing commenced in Jan 91 and completed in Dec 97. DCU ECP-556 delivered in Dec 91, and the AFCS ECP 558 delivered in Aug 93. The DCU validation completed in Sep 1995. The DCU flight testing started in Nov 95 and completed in May 97, and production installations are ongoing. The AFCS modification program is complete.

FINANCIAL PLAN: (TOA, \$ in Millions)

	Prior Years		FY 2003		FY 2004		FY 2005		FY 2006		FY 2007		FY 2008		FY2009		To Complete		Total		
	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	
RDT&E																					
PROCUREMENT																					
Installation Kits																					
ECP #556 Kit	312	213.6																			
ECP #558 Kit	315	12.6																			
XXX Kit																					
Installation Kits N/R	4	84.9																			
Installation Equipment																					
GFE		0.5																			
Installation Equipment N/R																					
Engineering Change Orders																					
Moisture Debris Covers		*																			
Wear Plate Blade Atch Fitting		0.2																			
Accessory Gear Box		1.2																			
Horiz. Hinge Pin Bearing		0.2																			
Pitch Link Assembly		0.9																			
Fuzz Burn-off		0.2																			
Data		2.0																			
Training Equipment	2	1.8																			
Support Equipment		9.1																			
ILS																					
Other Support		23.5		0.8		0.9		0.9													
Interim Contractor Support		2.7																			
Installation Cost	120	49.3	72	1.7	71	1.2	49	0.7													
<b>Total Procurement</b>		<b>402.5</b>		<b>2.6</b>		<b>2.1</b>		<b>1.6</b>													

- Notes:  
 1. Totals may not add due to rounding  
 2. Asterisk indicates amount less than \$50K

**Exhibit P-3a**

MODELS OF SYSTEMS AFFECTED: **H-46** MODIFICATION TITLE: **Dynamic Component Upgrade (DCU)** (OSIP 25-91)

INSTALLATION INFORMATION: All components will be modified at NADEP Cherry Point to DCU configuration concurrent with component overhaul/repair. Installation cost includes consumable material used during component overhaul/repair. Most DCU configuration components are installed in aircraft at O-level, except AFC-433 Parts 2 & 12, which are being installed in aircraft by depot level FMT. The quantities reflected in the tables below are aircraft installation quantities, and dollar figures in the tables include component modification, GFM, and aircraft installation.

METHOD OF IMPLEMENTATION: **Aircraft to be modified by Government Owned Contractor Operated (GOCO) Field Mod Teams**

ADMINISTRATIVE LEADTIME:                     N/A                     Months PRODUCTION LEADTIME:                     N/A                     Months

CONTRACT DATES: FY 2003:                     N/A                     FY 2004:                     N/A                     FY 2005:                     N/A                    

DELIVERY DATE: FY 2003:                     N/A                     FY 2004:                     N/A                     FY 2005:                     N/A                    

(\$ in Millions)

Cost:	Prior Years		FY 2003		FY 2004		FY 2005		FY 2006		FY 2007		FY 2008		FY 2009		To Complete		TOTAL		
	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	
FY 2002 & PY (312) kits	120	49.3	72	1.7	71	1.2	49	0.7													
FY 2003 ( ) kits																					
FY 2004 ( ) kits																					
FY 2005 ( ) kits																					
FY 2006 ( ) kits																					
FY 2007 ( ) kits																					
FY 2008 ( ) kits																					
FY 2009 ( ) kits																					
To Complete ( ) kits																					
<b>TOTAL</b>	<b>120</b>	<b>49.3</b>	<b>72</b>	<b>1.7</b>	<b>71</b>	<b>1.2</b>	<b>49</b>	<b>0.7</b>													

Installation Schedule

	FY 2002 & Prior	FY 2003				FY 2004				FY 2005				FY 2006				FY 2007				
		1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	
In	120	18	18	18	18	18	18	18	17	17	16	16										
Out	101	19	18	18	18	18	18	18	18	17	17	16	16									

	FY 2008				FY 2009				To Complete	TOTAL
	1	2	3	4	1	2	3	4		
In										
Out										

Exhibit P-3a	Individual Modification	
MODIFICATION TITLE:	<u>Safety Improvement Program (OSIP 25-97)</u>	
MODELS OF SYSTEMS AFFECTED:	<u>H-46</u>	TYPE MODIFICATION: <u>Safety (HONA Category A)</u>
<p>DESCRIPTION/JUSTIFICATION:                  The Safety Improvement Program was directed by Chief of Naval Operations (CNO) letter 7100 serial N880F/7U660758 dated 10 Jan 97, and approved as an Abbreviated Acquisition Program (AAP) by the Program Executive Officer (PEO) on 24 Oct 97. This program contains the following Engineering Change Proposals (ECP):</p> <ol style="list-style-type: none"> <li>1. HYDRAULIC SYSTEM UPGRADE and UTILITY HYDRAULIC SYSTEM REDESIGN: This ECP was completed in FY2000, but the fleet has experienced ongoing problems with the hydraulic system following installation of the modification. The Utility Hydraulic System Redesign will assess the overall configuration of the hydraulic system and correct deficiencies to improve system performance. This modification will be installed in 210 CH-46E aircraft (186 active + 24 reserve).</li> <li>2. UPPER DUAL BOOST ACTUATOR (UDBA) and LOWER DUAL BOOST ACTUATOR (LDBA): The housing for the actuators is highly susceptible to stress corrosion cracking. In addition, the threaded connections in the UDBA control valve assembly have experienced material wear. The material wear and housing cracks have caused one Class A mishap and one hazard report (HAZREP). If the control valve malfunctions, the pilot cannot control the drive direction of the helicopter, a potentially life threatening situation. As a result of these problems, two airframe bulletins have been issued and currently the actuator undergoes a recurring 200 hour inspection to prevent additional failures. This program will procure redesigned actuators that eliminate the failure mode in the control valve assembly. This modification will be installed in 210 CH-46E aircraft (186 active + 24 reserve).</li> <li>3. NIGHT VISION GOGGLE (NVG) COMPATIBLE COCKPIT and NVG COMPATIBLE COCKPIT DOME LIGHT: The NVG Compatible Cockpit ECP was completed in FY2000, but did not convert the cockpit dome light. An additional ECP is funded in FY2004 to convert the cockpit dome light to be NVG compatible. Inadvertent activation of the cockpit dome light switch during NVG operations can result in severe degradation of NVGs, loss of outside reference, and potential loss of aircraft and personnel. This program will modify the configuration of 65 H-46D aircraft (all active, no reserves) and 226 CH-46E aircraft (202 active + 24 reserve).</li> <li>4. RUNNING ENGINE WASH: The poor T58-16/402 engine performance is due to dirt and oil residue in the compressor section. Maintenance requires daily wash after over-shipboard operations to remove salt encrustation. Improved nozzle design better atomizes cleaning fluid, allows engine wash to be performed with the engine running, and is environmentally friendly. This program will modify the configuration of 65 H-46D aircraft (all active, no reserves) and 226 CH-46E aircraft (202 active + 24 reserve).</li> <li>5. SLIDING RESCUE HATCH (HELL HOLE DOOR): This ECP is complete.</li> </ol> <p>DEVELOPMENT STATUS/MAJOR DEVELOPMENT MILESTONES:</p> <ol style="list-style-type: none"> <li>1. UTILITY HYDRAULIC SYSTEM REDESIGN: This modification is programmed to begin in FY2004.</li> <li>2. UPPER DUAL BOOST ACTUATOR : The ECP and engineering design are scheduled for FY 2003, to be followed by an initial kit procurement in FY 2004.</li> <li>3. LOWER DUAL BOOST ACTUATOR: This modification is programmed to begin in FY2004.</li> <li>3. NVG COMPATIBLE COCKPIT DOME LIGHT: This modification is programmed to begin in FY2004.</li> <li>4. T58-16/402 RUNNING ENGINE WASH: The H-46D model ECP was approved in Nov 97, and the CH-46E model ECP was approved in Dec 97. Kit installations were originally planned to be at O-Level. However, significant problems were encountered installing and operating the wash system, so the H-46 FST re-designed the modification and submitted a new ECP that was approved in May 00. The revised modification installs an airframe and engine modification kit at the D-level. Production installs are ongoing. This ECP is being installed concurrent with the H-46 Engine Control System Retrofit (OSIP 28-99).</li> <li>5. SLIDING RESCUE HATCH (HELL HOLE DOOR): This upgrade is complete.</li> </ol>		

FINANCIAL PLAN: (TOA, \$ in Millions)

	Prior Years		FY 2003		FY 2004		FY 2005		FY 2006		FY 2007		FY 2008		FY2009		To Complete		Total		
	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	
RDT&E																					
PROCUREMENT																					
Installation Kits																					
Hydraulic Sys Upgrade (D)	81	1.1																			
Hydraulic Sys Upgrade (E)	229	3.3																			
Utility Hydraulic Sys Redesign (E)					47	0.2	56	0.2													
Lower Dual Boost Actuat (E)					47	0.4	56	0.5													
NVG Compatible Cockpit (D)	81	3.0																			
NVG Cockpit Dome Light (D/E)					291	0.3															
T58 Running Engine Wash																					
PPC-165 (D Engine)	81	0.1																			
AFC-477 (D Aircraft)	65	0.1																			
PPC-165 (E Engine)	687	0.8																			
AFC-492 (E Aircraft)	123	0.2	71	0.2																	
Sliding Rescue Hatch (D & E)	66	0.8																			
Installation Kits N/R		1.3		0.1		0.7															
Installation Equipment																					
XXX Equip																					
Installation Equipment N/R																					
Engineering Change Orders																					
XXX Kit ECO XXX																					
XXX Equip ECO XXX																					
Data		0.3				0.4															
Training Equipment	5	*																			
Support Equipment		*																			
ILS		0.3																			
Other Support		1.0		0.4		0.7		0.5													
Interim Contractor Support																					
Installation Cost	509	2.5	59	0.2	72	0.2	47	0.8													
<b>Total Procurement</b>		<b>14.9</b>		<b>0.9</b>		<b>2.9</b>		<b>1.9</b>													

Notes:  
 1. Totals may not add due to rounding  
 2. Asterisk indicates amount less than \$50K

**Exhibit P-3a**

MODELS OF SYSTEMS AFFECTED: H-46 MODIFICATION TITLE: Safety Improvement Program (Running Engine Wash modification)

INSTALLATION INFORMATION:

METHOD OF IMPLEMENTATION: Government Owned Contractor Operated (GOCO) Field Mod Team (FMT)

ADMINISTRATIVE LEADTIME: 5 Months PRODUCTION LEADTIME: 5 Months

CONTRACT DATES: FY 2003: Feb-03 FY 2004: N/A FY 2005: N/A

DELIVERY DATE: FY 2003: Jul-03 FY 2004: N/A FY 2005: N/A

(\$ in Millions)

Cost:	Prior Years		FY 2003		FY 2004		FY 2005		FY 2006		FY 2007		FY 2008		FY 2009		To Complete		TOTAL		
	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	
FY 2002 & PY (569) kits	509	2.5	59	0.2	1	*															
FY 2003 (71) kits					71	0.2															
FY 2004 ( ) kits																					
FY 2005 ( ) kits																					
FY 2006 ( ) kits																					
FY 2007 ( ) kits																					
FY 2008 ( ) kits																					
FY 2009 ( ) kits																					
To Complete (32) kits																					
<b>TOTAL</b>	<b>509</b>	<b>2.5</b>	<b>59</b>	<b>0.2</b>	<b>72</b>	<b>0.2</b>															

Note: Prior year figures include several D-level modifications including NVG Compatible Cockpit, Running Engine Wash, Sliding Rescue Hatch, and EEDS Removal. FY02 and out figures only include the Running Engine Wash modification.

Installation Schedule

	FY 2002 & Prior	FY 2003				FY 2004				FY 2005				FY 2006				FY 2007				
		1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	
In	509	15	15	15	14	18	18	18	18													
Out	492	17	15	15	15	14	18	18	18	18												

	FY 2008				FY 2009				To Complete	TOTAL
	1	2	3	4	1	2	3	4		
In										
Out										

**Exhibit P-3a**

MODELS OF SYSTEMS AFFECTED: CH-46E MODIFICATION TITLE: Safety Improvement Program (Utility Hydraulic System Redesign & Lower Dual Boost Actuator modifications)

INSTALLATION INFORMATION:

METHOD OF IMPLEMENTATION: Government Owned Contractor Operated (GOCO) Field Mod Team (FMT)

ADMINISTRATIVE LEADTIME: 3 Months PRODUCTION LEADTIME: 12 Months

CONTRACT DATES: FY 2003: N/A FY 2004: Dec-03 FY 2005: Dec-04

DELIVERY DATE: FY 2003: N/A FY 2004: Dec-04 FY 2005: Dec-05

(\$ in Millions)

Cost:	Prior Years		FY 2003		FY 2004		FY 2005		FY 2006		FY 2007		FY 2008		FY 2009		To Complete		TOTAL		
	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	
FY 2002 & PY ( ) kits																					
FY 2003 ( ) kits																					
FY 2004 (47) kits							47	0.8													
FY 2005 (56) kits																					
FY 2006 ( ) kits																					
FY 2007 ( ) kits																					
FY 2008 ( ) kits																					
FY 2009 ( ) kits																					
To Complete ( ) kits																					
<b>TOTAL</b>							<b>47</b>	<b>0.8</b>													

Installation Schedule

FY 2002 & Prior	FY 2003				FY 2004				FY 2005				FY 2006				FY 2007			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
In									15	16	16									
Out										15	16									

	FY 2008				FY 2009				To Complete	TOTAL
	1	2	3	4	1	2	3	4		
In										
Out										

Exhibit P-3a

Individual Modification

MODIFICATION TITLE: Engine Control System (ECS) Retrofit (OSIP 28-99)

MODELS OF SYSTEMS AFFECTED: H-46 TYPE MODIFICATION: Safety (HONA Category A)

DESCRIPTION/JUSTIFICATION: The current H-46 Engine Condition Control System (ECCS) has several failure modes which cause engines to shut down in flight; this presents a significant safety hazard to the fleet. Three bulletins have been issued by NAVAIR to inspect for system deficiencies. A formal system safety analysis utilizing historical failure data defines this as a Category One hazard and predicts six to seven failures per year. In the last three and a half years there have been 35 hazard reports (HAZREPs) issued documenting this failure mode, and it is estimated that 20 more have occurred which have not been reported through the HAZREP system. The aircraft has a limited single engine operating envelope and is vulnerable to engine failure while flying and hovering over water. There have been five aircraft lost at sea in which pilots reported engine failure as the cause of the mishap. The aircraft were not recovered, and therefore, the specific engine failure mode could not be determined, but it is likely that ECCS caused some of the engine failures and ultimately led to the loss of aircraft. The proposed solution to this safety problem is to convert to an alternative Engine Control System (ECS) utilized by the commercial variant of the H-46. The proposed ECS will eliminate the safety failure modes, has a proven track record, needs only slight modification for military use, increases reliability, and will increase aircraft capability through increased engine responsiveness. Implementation will require configuration changes to the airframe and the engine. This is an urgent safety issue that must be resolved to eliminate future loss of crew and aircraft. This modification is being installed on 65 H-46D aircraft (all active); and on 226 CH-46E aircraft (202 active + 24 reserve).

DEVELOPMENT STATUS/MAJOR DEVELOPMENT MILESTONES: The contract for Proof of Concept, validation and verification (val/ver) kits for this Non-Development Item (NDI) was awarded May 1999, and the Engineering Change Proposal (ECP) was approved Jun 2000. Validation installation for D-model was completed 2nd quarter FY2001, followed immediately by Electromagnetic Interface (EMI) testing and Verification installation in 3rd quarter FY2001. Production installations in Navy D-models are complete. The CH-46E Validation/Verification installation and Electromagnetic Compatibility (EMC) testing are complete, and production E-model installations are in process.

FINANCIAL PLAN: (TOA, \$ in Millions)

	Prior Years		FY 2003		FY 2004		FY 2005		FY 2006		FY 2007		FY 2008		FY2009		To Complete		Total		
	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	
RDT&E																					
PROCUREMENT																					
Installation Kits																					
A-Kit D-Model Airframe Kit	63	0.4																			
A-Kit E-Model Airframe Kit	122	1.4	71	0.9	32	0.4															
B-Kit D&E-Model Airframe Kit	185	11.2	23	1.3	32	1.8															
B-Kit (RILOP)					37	*	26	*													
Overspeed Kit (D/E-Model)	370	1.6	142	0.7	64	0.3															
OEC-3 (D-Aircraft)	130	0.5																			
OEC-4 (E-Aircraft)	246	0.6	142	0.2	64	0.1															
Fuel Line Assy Kit (D-Aircraft)	63	0.1																			
Fuel Priming System (D-Aircraft)		0.1																			
Installation Kits NR	3	4.8																			
Installation Equipment																					
Control Boxes	79	0.3																			
Engine Condition Actuator					0.1																
Installation Equipment NR																					
Engineering Change Orders		0.2	0.5																		
Actuator Mod																					
XXX Equip ECO XXX																					
Data		1.0	*		0.1																
Training Equipment	8	0.5																			
Support Equipment		0.5																			
ILS		1.3	0.3		0.3																
Other Support		3.0	1.0		0.7			0.4													
Interim Contractor Support																					
Installation Cost	117	4.0	72	2.3	72	2.8	32	1.6													
<b>Total Procurement</b>		<b>31.5</b>		<b>7.1</b>		<b>6.5</b>		<b>2.1</b>													

- Notes:  
 1. Totals may not add due to rounding  
 2. Asterisk indicates amount less than \$50K

**Exhibit P-3a**

MODELS OF SYSTEMS AFFECTED: H-46 (OSIP 28-99) MODIFICATION TITLE: ENGINE CONTROL SYSTEM RETROFIT

INSTALLATION INFORMATION:

METHOD OF IMPLEMENTATION: Government Owned Contractor Operated (GOCO) Field Mod Team

ADMINISTRATIVE LEADTIME: 3 Months PRODUCTION LEADTIME: 7 Months

CONTRACT DATES: FY 2003: May-03 FY 2004: Dec-03 FY 2005: N/A

DELIVERY DATE: FY 2003: Dec-03 FY 2004: Jul-04 FY 2005: N/A

(\$ in Millions)

Cost:	Prior Years		FY 2003		FY 2004		FY 2005		FY 2006		FY 2007		FY 2008		FY 2009		To Complete		TOTAL		
	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	
FY 2002 & PY (190) kits	117	4.0	72	2.3	1																
FY 2003 (71) kits					71	2.8															
FY 2004 (32) kits							32	1.6													
FY 2005 ( ) kits																					
FY 2006 ( ) kits																					
FY 2007 ( ) kits																					
FY 2008 ( ) kits																					
FY 2009 ( ) kits																					
To Complete ( ) kits																					
<b>TOTAL</b>	<b>117</b>	<b>4.0</b>	<b>72</b>	<b>2.3</b>	<b>72</b>	<b>2.8</b>	<b>32</b>	<b>1.6</b>													

Installation Schedule

FY 2002 & Prior	FY 2003				FY 2004				FY 2005				FY 2006				FY 2007			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
In	117	18	18	18	18	18	18	18	18	16	16									
Out	97	20	18	18	18	18	18	18	18	18	16	16								

	FY 2008				FY 2009				To Complete	TOTAL
	1	2	3	4	1	2	3	4		
In										
Out										

Exhibit P-3a Individual Modification

MODIFICATION TITLE: Electrical System Upgrade (OSIP 29-99)

MODELS OF SYSTEMS AFFECTED: CH-46E TYPE MODIFICATION: Safety (HONA Category A)

DESCRIPTION/JUSTIFICATION: This program contains the following Engineering Change Proposals:  
 1. GENERATOR CONTROL UNIT: The power generation system has been the cause of ten hazard reports (HAZREP) over the past three years. The causal factor has been traced back to the generators and the voltage control system. Two incidents resulted in dual generator failure, and seven incidents resulted in aircraft smoking/fires. (One of those fires was caused by flammable fluid ingestion into the generator that turned a hydraulic leak into a massive fire that consumed the entire aircraft in a Class A mishap.) A formal system safety analysis utilizing historical failure data defines this hazard as a potential Category One hazard and predicts two to three failures per year. This is an urgent safety problem that must be alleviated to eliminate loss of life and aircraft. The proposed solution is to modify the power generation system to eliminate the safety problem, provide cleaner power to sensitive avionics components, and improve performance of the generator to meet the power demand for future electrical installation in the aircraft. This modification will be installed in 224 CH-46E aircraft (200 active + 24 reserve).  
 2. GENERATOR UPGRADE: The aircraft generator has been identified by NAVAIRSYSCOM System Safety Office as having a Hazard Risk Index of 6 to 8. Generator failures compounded with hydraulic fluid leakage / misting, chafing or failed lines, pose an in-flight fire hazard. Procuring lightweight modern generators is expected to mitigate this safety hazard and save approximately 40 pounds for the CH-46E.

DEVELOPMENT STATUS/MAJOR DEVELOPMENT MILESTONES:  
 1. GENERATOR CONTROL UNIT: The contract for development and qualification of a new generator control panel awarded in Jun 2000. Preliminary Design Reviews (PDR) have been completed as well as breadboard and bench testing. Validation / Verification installations and environmental testing are complete. Production modification kits deliveries began delivering in Sep 2002, and installations are ongoing.  
 2. GENERATOR UPGRADE: This modification is programmed to begin in FY2005.

FINANCIAL PLAN: (TOA, \$ in Millions)

	Prior Years		FY 2003		FY 2004		FY 2005		FY 2006		FY 2007		FY 2008		FY2009		To Complete		Total		
	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	
RDT&E																					
PROCUREMENT																					
Installation Kits																					
A- Kit							15	0.8													
XXX Kit																					
XXX Kit																					
Installation Kits N/R		0.7						1.0													
Installation Equipment																					
Main Generator Control Unit (GCU)	138	0.4	104	0.3	128	0.3															
Auxiliary Power GCU	69	0.2	52	0.1	64	0.2															
Generator								0.2													
Installation Equipment N/R	6	0.8																			
Engineering Change Orders																					
XXX Kit ECO XXX																					
XXX Equip ECO XXX																					
Data						0.1															
Training Equipment	6	0.6																			
Support Equipment	12	0.1	12	0.1																	
ILS		0.2		0.3		0.2		0.2													
Other Support		1.5		0.4		0.5		0.4													
Interim Contractor Support																					
Installation Cost																					
<b>Total Procurement</b>		<b>4.4</b>		<b>1.1</b>		<b>1.3</b>		<b>2.6</b>													

- Notes:  
 1. Totals may not add due to rounding  
 2. Asterisk indicates amount less than \$50K

**Exhibit P-3a**

MODELS OF SYSTEMS AFFECTED: CH-46E MODIFICATION TITLE: Electrical System Upgrade (Generator Upgrade)

INSTALLATION INFORMATION:

METHOD OF IMPLEMENTATION: To be installed concurrent with SDLM / IMC at NADEP Cherry Pt

ADMINISTRATIVE LEADTIME: 9 Months PRODUCTION LEADTIME: 6 Months

CONTRACT DATES: FY 2003: N/A FY 2004: N/A FY 2005: Jun-05

DELIVERY DATE: FY 2003: N/A FY 2004: N/A FY 2005: Dec-05

(\$ in Millions)

Cost:	Prior Years		FY 2003		FY 2004		FY 2005		FY 2006		FY 2007		FY 2008		FY 2009		To Complete		TOTAL		
	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	
FY 2002 & PY ( ) kits																					
FY 2003 ( ) kits																					
FY 2004 ( ) kits																					
FY 2005 (15) kits																					
FY 2006 ( ) kits																					
FY 2007 ( ) kits																					
FY 2008 ( ) kits																					
FY 2009 ( ) kits																					
To Complete ( ) kits																					
TOTAL																					

Installation Schedule

FY 2002 & Prior	FY 2003				FY 2004				FY 2005				FY 2006				FY 2007				
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	
In																					
Out																					

In	FY 2008				FY 2009				To Complete	TOTAL
	1	2	3	4	1	2	3	4		
In										
Out										

Exhibit P-3a	Individual Modification																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																									
MODIFICATION TITLE:	<u>T-58 Engine Reliability Improvement Program (ERIP) (OSIP 15-01)</u>																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																									
MODELS OF SYSTEMS AFFECTED:	<u>CH-46E (T58-GE-16 Engine)</u> <span style="float: right;">TYPE MODIFICATION: <u>Safety (HONA Category A)</u></span>																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																									
<p>DESCRIPTION/JUSTIFICATION: T58-GE-16 reliability and performance trends are unacceptable, and are severely impacting Fleet safety, readiness and war fighting capability. The T58-GE-16 Mean Time Between Repairs (MTBR) is projected to fall below 320 hours by FY2002 and will require 309 major repairs per year. The NAVAIR System Safety Team has determined that the current Hazard Risk Index (HRI) for the T58-GE-16 is "IIC" (critical, occasional ) and trending towards "IIB" (critical, probable). The CH-46E Helicopter must be logistically supported until at least 2012, however T58-GE-16 support costs are being driven to unaffordable levels. This program will drastically improve Fleet operating safety and readiness, while providing tremendous reductions in maintenance man-hours and Operations &amp; Support (O&amp;S) costs. Funds support production and procurement of a T58-GE-16 engine core or "Gas Path", depot overhaul of key engine accessories, incorporation of all approved engine Component Improvement Program (CIP) changes, and depot final assembly of manufacturer delivered "Gas Path" with accessory components. This program is projected to restore a 900-hour (MTBR), improve performance to the original power specification, and reduce the major engine repairs per year to 70 in FY2006. This modification will be installed in 223 aircraft (199 active + 24 reserve).</p> <p>DEVELOPMENT STATUS/MAJOR DEVELOPMENT MILESTONES: Congress approved \$3M plus-up in FY2001 for risk mitigation, prototypes and non-recurring engineering; the contract for these efforts awarded in Jan 2001. The prototype engine gas path modules were delivered in Apr 2002, and the engine prototypes were completed in Jul 2002. An Low Rate Initial Production (LRIP) contract was awarded in Aug 2002, and gas path module deliveries started in Jan 2003. Approval for Full Rate Production (FRP) was granted and a production lot was ordered in Mar 2003. Installations are ongoing.</p>																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																										
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	<table border="1" style="width:100%; border-collapse: collapse; text-align: center;"> <thead> <tr> <th rowspan="2"></th> <th colspan="2">Prior Years</th> <th colspan="2">FY 2003</th> <th colspan="2">FY 2004</th> <th colspan="2">FY 2005</th> <th colspan="2">FY 2006</th> <th colspan="2">FY 2007</th> <th colspan="2">FY 2008</th> <th colspan="2">FY2009</th> <th colspan="2">To Complete</th> <th colspan="2">Total</th> </tr> <tr> <th>Qty</th> <th>\$</th> </tr> </thead> <tbody> <tr><td>RDT&amp;E</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr> <tr><td>PROCUREMENT</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr> <tr><td>Installation Kits</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr> <tr><td>Gas Path Module Kit</td><td>30</td><td>15.2</td><td>77</td><td>38.2</td><td>102</td><td>47.5</td><td>86</td><td>38.7</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr> <tr><td>Accessory Kit</td><td>41</td><td>0.4</td><td>101</td><td>0.8</td><td>113</td><td>0.9</td><td>44</td><td>0.4</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr> <tr><td>T-5 Harness Kit</td><td>20</td><td>*</td><td>23</td><td>0.1</td><td>31</td><td>0.1</td><td>27</td><td>0.1</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr> <tr><td>Installation Kits N/R</td><td>3</td><td>4.6</td><td></td><td>2.7</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr> <tr><td>Installation Equipment</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr> <tr><td>XXX Equip</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr> <tr><td>Installation Equipment N/R</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr> <tr><td>Engineering Change Orders</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr> <tr><td>Preplanned Product Improvement</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr> <tr><td>Erosion Blade Coating NRE</td><td></td><td></td><td></td><td>0.4</td><td></td><td>0.4</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr> <tr><td>Erosion Blade Coating Prod Cut-In</td><td></td><td></td><td></td><td></td><td>56</td><td>2.6</td><td>86</td><td>3.6</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr> <tr><td>Erosion Blade Coating Retrofit Kits</td><td></td><td></td><td></td><td></td><td>33</td><td>2.1</td><td>77</td><td>5.0</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr> <tr><td>Start Bleed Valves</td><td></td><td></td><td></td><td>0.2</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr> <tr><td>Data</td><td></td><td>0.6</td><td></td><td>0.2</td><td></td><td>0.7</td><td></td><td>0.9</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr> <tr><td>Training Equipment</td><td></td><td></td><td></td><td>0.2</td><td></td><td>1.0</td><td></td><td>1.0</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr> <tr><td>Support Equipment</td><td></td><td>1.3</td><td>3</td><td>2.1</td><td>4</td><td>3.5</td><td>1.4</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr> <tr><td>ILS</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr> <tr><td>Other Support</td><td></td><td>2.9</td><td></td><td>2.6</td><td></td><td>4.3</td><td></td><td>4.3</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr> <tr><td>Interim Contractor Support</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr> <tr><td>Installation 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Equip																						Installation Equipment N/R																						Engineering Change Orders																						Preplanned Product Improvement																						Erosion Blade Coating NRE				0.4		0.4																Erosion Blade Coating Prod Cut-In					56	2.6	86	3.6														Erosion Blade Coating Retrofit Kits					33	2.1	77	5.0														Start Bleed Valves				0.2																		Data		0.6		0.2		0.7		0.9														Training Equipment				0.2		1.0		1.0														Support Equipment		1.3	3	2.1	4	3.5	1.4															ILS																						Other Support		2.9		2.6		4.3		4.3														Interim Contractor Support																						Installation Cost	1	1.7		1.3	3	1.6	4	1.0														<b>Total Procurement</b>		<b>26.6</b>		<b>48.7</b>		<b>64.7</b>		<b>56.4</b>																															
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<b>Total Procurement</b>		<b>26.6</b>		<b>48.7</b>		<b>64.7</b>		<b>56.4</b>																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																		
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**Exhibit P-3a**

MODELS OF SYSTEMS AFFECTED: CH-46E (T58-GE-16 Engine) MODIFICATION TITLE: T-58 Engine Reliability Improvement Program (Engine Modification)

INSTALLATION INFORMATION:

METHOD OF IMPLEMENTATION: Modify engine and engine accessories concurrent with repair at NADEP Cherry Point

ADMINISTRATIVE LEADTIME: 2 Months PRODUCTION LEADTIME: 7 Months

CONTRACT DATES: FY 2003: Mar-03 FY 2004: Nov-03 FY 2005: Nov-04

DELIVERY DATE: FY 2003: Sep-03 FY 2004: Jun-04 FY 2005: May-05

(\$ in Millions)

Cost:	Prior Years		FY 2003		FY 2004		FY 2005		FY 2006		FY 2007		FY 2008		FY 2009		To Complete		TOTAL		
	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	
FY 2002 & PY (22) kits	9	1.7	8	1.3	5	0.8															
FY 2003 ( ) kits																					
FY 2004 ( ) kits																					
FY 2005 ( ) kits																					
FY 2006 ( ) kits																					
FY 2007 ( ) kits																					
FY 2008 ( ) kits																					
FY 2009 ( ) kits																					
To Complete ( ) kits																					
<b>TOTAL</b>	<b>9</b>	<b>1.7</b>	<b>8</b>	<b>1.3</b>	<b>5</b>	<b>0.8</b>															

Note: Installation funding includes: 1. Modification of prototype T58-16A engine, and 2. modification of (8) accessory shipsets in FY02 + (8) accessory shipsets in FY03 + (5) accessory shipsets in FY04.

Installation Schedule

	FY 2002 & Prior	FY 2003				FY 2004				FY 2005				FY 2006				FY 2007				
		1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	
In	9	2	2	2	2	2	2	1														
Out	6	3	2	2	2	2	2	2	1													

	FY 2008				FY 2009				To Complete	TOTAL
	1	2	3	4	1	2	3	4		
In										
Out										

**Exhibit P-3a**

MODELS OF SYSTEMS AFFECTED: CH-46E (T58-GE-16 Engine) MODIFICATION TITLE: T-58 Engine Reliability Improvement Program (Automated Data Acquisition System-ADAS- and Test Cell Modification)

INSTALLATION INFORMATION:

METHOD OF IMPLEMENTATION: Contractor Field Mod Team

ADMINISTRATIVE LEADTIME: 4 Months PRODUCTION LEADTIME: 4 Months

CONTRACT DATES: FY 2003: Feb-04 FY 2004: Feb-04 FY 2005: N/A

DELIVERY DATE: FY 2003: May-04 FY 2004: Jun-04 FY 2005: N/A

(\$ in Millions)

Cost:	Prior Years		FY 2003		FY 2004		FY 2005		FY 2006		FY 2007		FY 2008		FY 2009		To Complete		TOTAL		
	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	
FY 2002 & PY ( ) kits																					
FY 2003 (3) kits					3	0.8															
FY 2004 (4) kits							4	1.0													
FY 2005 ( ) kits																					
FY 2006 ( ) kits																					
FY 2007 ( ) kits																					
FY 2008 ( ) kits																					
FY 2009 ( ) kits																					
To Complete ( ) kits																					
<b>TOTAL</b>					<b>3</b>	<b>0.8</b>	<b>4</b>	<b>1.0</b>													

Installation Schedule

	FY 2002 & Prior	FY 2003				FY 2004				FY 2005				FY 2006				FY 2007			
		1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
In									3	2	2										
Out									3	2	2										

	FY 2008				FY 2009				To Complete	TOTAL
	1	2	3	4	1	2	3	4		
In										
Out										

Exhibit P-3a

Individual Modification

MODIFICATION TITLE: Aircraft Integrated Maintenance System (AIMS) (OSIP 10-03)

MODELS OF SYSTEMS AFFECTED: CH-46E TYPE MODIFICATION: R&M (HONA Category B)

DESCRIPTION/JUSTIFICATION: AIMS is a Commercial Off The Shelf (COTS) vibration monitoring system to be permanently installed in the aircraft. AIMS is a comprehensive set of aircraft monitoring hardware and support software. The purpose of the system is to build support equipment functions into the aircraft as a permanent installation. Thus, AIMS will eliminate most H-46 peculiar support equipment requirements. This equipment will provide aircrews immediate feedback on aircraft condition and engine performance, which enhances the ability to predict catastrophic failures and reduces maintenance costs. In 1997, PMA226 fielded new vibration equipment to a small sample of H-46 aircraft and implemented a 100 hour vibration monitoring check. Since implementation, vibration monitoring has been instrumental in predicting (and preventing) impending component failures. For example, vibration data was received from an aircraft that had undergone three aft transmission removals for input pinion seal leakage. Analysis of the vibration monitoring data revealed a major problem with the #2 engine. Further investigation of the engine revealed impending failure of the right angle drive bearings. Failure of the engine may have resulted in damage or loss of the aircraft. Another example is an aircraft that, while performing a 100 hour vibration check, experienced aft transmission vertical vibration levels that exceeded acceptable limits. Further investigation revealed impending failure of the electrical generator. Without vibration monitoring, the problem with the generator would have gone undetected until catastrophic failure. Failure of the generator may have resulted in an electrical fire and/or collateral damage to the aircraft. This modification will be installed in 154 aircraft (130 active + 24 reserve).

DEVELOPMENT STATUS/MAJOR DEVELOPMENT MILESTONES: Contracts to integrate the COTS into the H-46 aircraft, design an installation kit, modify Control Data Navigation Unit (CDNU) software, and prepare technical data were awarded in Jun 2003. Prototype delivery scheduled in Feb 2004, Critical Design Review (CDR) in Apr 2004, Validation / Verification scheduled for July 2004. The first production lot is scheduled to be ordered in Jul 2004.

FINANCIAL PLAN: (TOA, \$ in Millions)

	Prior Years		FY 2003		FY 2004		FY 2005		FY 2006		FY 2007		FY 2008		FY2009		To Complete		Total		
	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	
RDT&E																					
PROCUREMENT																					
Installation Kits																					
A- Kit					15	0.8	68	3.9													
XXX Kit																					
XXX Kit																					
Installation Kits N/R			4	4.0																	
Installation Equipment																					
XXX Equip																					
Installation Equipment N/R																					
Engineering Change Orders																					
XXX Kit ECO XXX																					
XXX Equip ECO XXX																					
Data						0.1	0.2														
Training Equipment					2	0.1	*														
Support Equipment					8	0.1	34	0.3													
ILS																					
Other Support			0.9		1.6		1.2														
Interim Contractor Support																					
Installation Cost					4	0.2	44	1.0													
<b>Total Procurement</b>				<b>4.9</b>		<b>2.9</b>		<b>6.6</b>													

Notes:

1. Totals may not add due to rounding
2. Asterisk indicates amount less than \$50K

**Exhibit P-3a**

MODELS OF SYSTEMS AFFECTED: CH-46E MODIFICATION TITLE: Aircraft Integrated Maintenance System (AIMS) (OSIP 10-03)

INSTALLATION INFORMATION:

METHOD OF IMPLEMENTATION: Government Owned Contractor Operated (GOCO) Field Mod Teams

ADMINISTRATIVE LEADTIME: 2 Months PRODUCTION LEADTIME: 8 Months

CONTRACT DATES: FY 2003: Jun-03 FY 2004: Jul-04 FY 2005: Nov-04

DELIVERY DATE: FY 2003: Feb-04 FY 2004: Mar-05 FY 2005: Jul-05

(\$ in Millions)

Cost:	Prior Years		FY 2003		FY 2004		FY 2005		FY 2006		FY 2007		FY 2008		FY 2009		To Complete		TOTAL		
	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	
FY 2002 & PY ( ) kits																					
FY 2003 (4) kits					4	0.2															
FY 2004 (17) kits							17	0.4													
FY 2005 (68) kits							27	0.6													
FY 2006 ( ) kits																					
FY 2007 ( ) kits																					
FY 2008 ( ) kits																					
FY 2009 ( ) kits																					
To Complete ( ) kits																					
<b>TOTAL</b>					<b>4</b>	<b>0.2</b>	<b>44</b>	<b>1.0</b>													

Installation Schedule

FY 2002 & Prior	FY 2003				FY 2004				FY 2005				FY 2006				FY 2007			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
In						2		2		8	18	18								
Out							2		2	8	18	18								

	FY 2008				FY 2009				To Complete	TOTAL
	1	2	3	4	1	2	3	4		
In										
Out										

Exhibit P-3a	Individual Modification																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																							
MODIFICATION TITLE:	<u>Light Weight Armor Replacement System (LWARS) OSIP 20-04</u>																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																							
MODELS OF SYSTEMS AFFECTED:	<u>CH-46E</u> <span style="float: right;">TYPE MODIFICATION: <u>Safety (HONA Category A)</u></span>																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																							
<p>DESCRIPTION/JUSTIFICATION: The efficiency of the CH-46E to perform the medium lift assault support mission largely depends on aircraft payload. The empty weight of the aircraft has increased significantly over the aircraft's more than 39 years of service, limiting payload and range, and degrading mission performance. The CH-46E aircraft has engine protective metallic armor plates on the aft pylon and around the flight control closet that are capable of protecting the aircraft from small arms fire (.30 cal; 7.62 mm round). Non-developmental armor systems exist to replace the existing steel plate armor with a lighter weight substitute, providing the same or better ballistic protection and a 35% weight reduction from the existing armor system. Reducing the empty weight of the aircraft is an extremely viable means of restoring mission effectiveness.</p> <p>DEVELOPMENT STATUS/MAJOR DEVELOPMENT MILESTONES: The request for proposal (RFP) was issued in Dec 2003, and the contract is expected to be awarded in Apr 2004. The prototype system is expected to deliver and undergo fit-check in 4th quarter 2004, to be immediately followed by exercise of the production option. This system will be installed by the Fleet as an Organizational Level maintenance change.</p>																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																								
FINANCIAL PLAN: (TOA, \$ in Millions)																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																								
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<td></td><td></td><td></td><td></td><td>147</td><td>0.3</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td> </tr> <tr> <td>  Provision Kit</td> <td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td> </tr> <tr> <td>    XXX Kit</td> <td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td> </tr> <tr> <td>    XXX Kit</td> <td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td> </tr> <tr> <td>  Installation Kits N/R</td> <td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td> </tr> <tr> <td>  Installation Equipment</td> <td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td> </tr> <tr> <td>    Armor Equip</td> <td></td><td></td><td></td><td></td><td>147</td><td>3.5</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td> </tr> <tr> <td>    Installation Equipment N/R</td> <td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td> </tr> <tr> <td>  Engineering Change Orders</td> <td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td> </tr> <tr> <td>    XXX Kit ECO XXX</td> <td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td> </tr> <tr> <td>    XXX Equip ECO XXX</td> <td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td> </tr> <tr> <td>  Data</td> <td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td> </tr> <tr> <td>  Training Equipment</td> 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**Exhibit P-3a**

MODELS OF SYSTEMS AFFECTED: CH-46E MODIFICATION TITLE: Light Weight Armor (LWARS) OSIP 20-04

INSTALLATION INFORMATION:

METHOD OF IMPLEMENTATION: Fleet O-Level Maintenance Activity

ADMINISTRATIVE LEADTIME: 6 Months PRODUCTION LEADTIME: 4 Months

CONTRACT DATES: FY 2003: N/A FY 2004: Apr-04 FY 2005: N/A

DELIVERY DATE: FY 2003: N/A FY 2004: Aug-04 FY 2005: N/A

(\$ in Millions)

Cost:	Prior Years		FY 2003		FY 2004		FY 2005		FY 2006		FY 2007		FY 2008		FY 2009		To Complete		TOTAL		
	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	
FY 2002 & PY ( ) kits																					
FY 2003 (4) kits																					
FY 2004 (17) kits																					
FY 2005 (68) kits																					
FY 2006 ( ) kits																					
FY 2007 ( ) kits																					
FY 2008 ( ) kits																					
FY 2009 ( ) kits																					
To Complete ( ) kits																					
TOTAL																					

Installation Schedule

	FY 2002 & Prior	FY 2003				FY 2004				FY 2005				FY 2006				FY 2007				
		1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	
In									1			30	30									
Out									1				30									

	FY 2008				FY 2009				To Complete	TOTAL
	1	2	3	4	1	2	3	4		
In										
Out										

Exhibit P-40, BUDGET ITEM JUSTIFICATION										DATE: <b>February 2004</b>	
APPROPRIATION/BUDGET ACTIVITY <b>Aircraft Procurement, Navy/APN-5 Aircraft Modifications</b>					P-1 ITEM NOMENCLATURE <b>H-1 Series Modifications</b>						
Program Element for Code B Items:											
	Prior Years	ID Code	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	To Complete	Total
QTY		A									
COST (In Millions)	<b>99.9</b>	A	<b>9.1</b>	<b>10.9</b>	<b>3.5</b>	<b>7.4</b>	<b>7.4</b>	<b>6.0</b>	<b>7.6</b>	<b>27.5</b>	<b>179.3</b>
<p>There are 89 H-1N's in the UH configuration (68 active/20 reserve/1 test) and 28 H-1Ns in the HH configuration (9 Marine/19 Navy) for a total of 117. The UH-1N provides command and control and combat assault support under day/night and adverse weather conditions. Additional UH-1N missions include special operations support, controls/coordination/guidance of supporting fire and aeromedical evacuation. The overall goal of the modifications budgeted in FY2005 is to eliminate safety hazards, remedy obsolescence and maintain significant mission capability until the planned retirement date. The HH configured aircraft provide local civilian and military search and rescue support, as well as augmenting Department of Homeland Security resources.</p>											
<b>OSIP No.</b>	<b>Description</b>	<b>Prior Years</b>	<b>FY 2003</b>	<b>FY 2004</b>	<b>FY 2005</b>	<b>FY 2006</b>	<b>FY 2007</b>	<b>FY 2008</b>	<b>FY 2009</b>	<b>To Complete</b>	<b>Total</b>
31-92	UH-1 NTIS	78.4	5.0	8.2	3.3	7.2	7.2	5.8	7.4	27.5	149.9
18-98	H-1N Safety Upgrades	21.5	4.1	2.7	0.2	0.2	0.2	0.2	0.2		29.4
	Total	<b>99.9</b>	<b>9.1</b>	<b>10.9</b>	<b>3.5</b>	<b>7.4</b>	<b>7.4</b>	<b>6.0</b>	<b>7.6</b>	<b>27.5</b>	<b>179.3</b>
<b>RESERVE FUNDING INCLUDED IN TOTAL</b>		5.2									
<p>Asterisk indicates amounts less than \$50K Totals may not add due to rounding</p>											

Exhibit P-3a Individual Modification

MODIFICATION TITLE: UH-1N NAVIGATIONAL THERMAL IMAGING SYSTM (NTIS) (OSIP 31-92)

MODELS OF SYSTEMS AFFECTED: 89 UH-1Ns, 7 reclamation a/c, 4 trainers, 4 lab units TYPE MODIFICATION: SAFETY

DESCRIPTION/JUSTIFICATION: Operational Requirements Document (ORD) AAS-51 states that the UH-1N requires a Navigational Thermal Imaging System (NTIS) to provide the U.S. Marine Corps with a night/day warfighting capability in the NOE/smoke/dust/haze environment. This capability reduces the safety risk by allowing the aircrew to see and avoid flight obstructions and locate targets that might not be visible with the naked eye or night vision goggles. The AN/AAQ-22 is a low cost, stabilized system which provides the required capability in the form of high quality real time imagery displayed into the UH-1N aircraft cockpit. The NTIS System is comprised of 5 components; Turret FLIR Unit (TFU), Central Electronics Unit (CEU), Hand Control Unit (HCU), Thermal Image Recorder (TIR), and the Video Display Unit (VDU). The NTIS is installed only in the UH-1N aircraft by AFC 278. The system also includes a Laser Range Finder (LRF) to determine the range to landmarks, targets, and tactical points of interest. Beginning FY97, the NTIS was upgraded from 1st generation to 3rd generation Forward Looking Infrared (FLIR) technology. The COTS Star SAFIRE modification consisted of a 3-5 micron focal plane array detector, an eye safe LRF and new optics. Additionally, the NTIS will be upgraded with a new Thermal Imaging Recorder (TIR) with mount and a Flat Panel Display replacement for the VDU due to a fire hazard. Additional modifications to the NTIS are being incorporated in order to add a COTS Laser Designator/Laser Pointer capability (BRITE Star). Laser designator capability is a threshold ORD requirement. The Laser Pointer capability is an ORD objective requirement. A contract has been signed to provide a minimum of 1 and a maximum of 125 upgrades to the AN/AAQ-22 series systems.

DEVELOPMENT STATUS/MAJOR DEVELOPMENT MILESTONES: The NTIS is a commercial off-the-shelf (COTS) item. MIL-STD-810C testing is complete. DT-III testing was completed in the fourth quarter 1994 and FOT&E was completed in the second quarter FY 1996. Additional testing occurred during fourth quarter 1998 for the NTIS upgrade. The completion of COTS post Milestone III testing of Laser Designator (BRITE Star) occurred in 3rd and 4th quarter of FY01 and has continued into FY02.

FINANCIAL PLAN: (TOA, \$ in Millions)

	Prior Years		FY 2003		FY 2004		FY 2005		FY 2006		FY 2007		FY 2008		FY 2009		To Complete		Total		
	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	
RDT&E																					
PROCUREMENT																					
Installation Kits																					
AFC 278 ECP E/JH HO 30006	105	2.6																			
AFC-334 TIR ECP#H-1-CP9-97R-1	105	0.1																			
AFC-364 (BRITE Star)			7	*	12	*	5	*													
Installation Kits N/R		3.4																			
Installation Equipment																					
NTIS System (GFE)	84	29.7																			
TIR (GFE)	107	1.0																			
NTIS Upgrade	81	27.9	4	1.4																	
Flat Panel Display	90	0.8																			
BRITE STAR	3	2.0	5	3.3	12	7.6	5	2.9													
Installation Equipment N/R		0.6																			
Engineering Change Orders																					
Data		0.5																			
Training Equipment	2	0.6																			
Support Equipment		1.1					2	*													
ILS		0.3		0.1		0.1		0.1													
Other Support		4.8		0.2		0.5		0.3													
Interim Contractor Support																					
Installation Cost	107	3.1	7	*	12	*	5	*													
<b>Total Procurement</b>		<b>78.4</b>		<b>5.0</b>		<b>8.2</b>		<b>3.3</b>													

Notes:

1. Totals may not add due to rounding
2. Asterisk indicates amount less than \$50K
3. FY04 NTIS Upgrade Procurement realigned to BRITE Star to continue FY03 BRITE Star Congressional Add.

Exhibit P-3a

MODELS OF SYSTEMS AFFECTED: UH-1N

MODIFICATION TITLE: UH-1N NAVIGATION THERMAL IMAGING SYSTEM (NTIS/BRITE STAR) (OSIP 31-92)

INSTALLATION INFORMATION:

METHOD OF IMPLEMENTATION: INSTALLED AT INTER-SERVICE SDLM AND BY CONTRACTOR FIELD MOD TEM

ADMINISTRATIVE LEADTIME: 3 Months PRODUCTION LEADTIME: 5 Months

CONTRACT DATES: FY 2003: Dec-02 FY 2004: Dec-03 FY 2005: Dec-04

DELIVERY DATE: FY 2003: May-03 FY 2004: May-04 FY 2005: May-05

(\$ in Millions)

Cost:	Prior Years		FY 2003		FY 2004		FY 2005		FY 2006		FY 2007		FY 2008		FY 2009		To Complete		TOTAL		
	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	
FY 2002 & PY (107 ) kits	107	3.1																			
FY 2003 (7) kits			7	*																	
FY 2004 (12) kits					12	*															
FY 2005 (5 ) kits							5	*													
FY 2006 ( 11) kits																					
FY 2007 (11) kits																					
FY 2008 (9) kits																					
FY 2009 (11) kits																					
To Complete (37) kits																					
TOTAL	107	3.1	7	*	12	*	5	*													

Installation Schedule

	FY 2002 & Prior	FY 2003				FY 2004				FY 2005				FY 2006							
		1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4				
In	107			5	2			5	7			2	3								
Out	107			5	2			5	7			2	3								

	FY 2007				FY 2008				FY 2009				To Complete	TOTAL	
	1	2	3	4	1	2	3	4	1	2	3	4			
In															
Out															

Exhibit P-3a Individual Modification

MODIFICATION TITLE: H-1N SAFETY UPGRADES (18-98)

MODELS OF SYSTEMS AFFECTED: HH-1N/UH-1N TYPE MODIFICATION: SAFETY

DESCRIPTION/JUSTIFICATION: Operational Requirements Document (ORD) AAS-51 requires that the following safety shortfalls be corrected. The HH/UH-1N helicopter fleet was designed in the 1960s, introduced in the 1970s and are projected to remain in the Department of Navy inventory until FY-2020. This program is designed to address safety issues, such as mishap casual factors associated with maintaining an older type model series aircraft. This safety upgrade program replaced the Tail Drive System (TDS). A COTS/NDI Improved Torque Indicator System will be added to provide a digital torque display to the aircrew to improve low power margin situational awareness. Tailboom Strake technology will be investigated to improve performance and reduce tailboom fatigue. Tailboom Strakes have been proven to increase aircraft and aircrew safety by reducing tailboom fatigue and pilot workload while improving tail rotor authority and single engine performance. Additionally, the overspeed Aural Alert Unit (AAU) will be modified. A modification to the CH-8500 Vibration Analysis Support Equipment (VASE) will also be needed. A COTS replacement Rotor Brake Quill (RBQ) assembly, component failures due to an obsolete design pose a significant risk to all aircrew, and Low Maintenance Battery (LMB) will be incorporated into all HH/UH-1N aircraft. Included in this OSIP is the requirement to correct the safety deficiencies of the Defensive Armament System (DAS): machine guns, carriages, mounts, and associated equipment. Improvements and enhancements to airframe Night Vision Goggle (NVG) compatibility along with communications equipment for external agency interaction during the Global War on Terrorism. A/C fatigue life issues and mitigating technology will be investigated to improve performance and mitigate aircraft fatigue. Incorporation of Crash Attenuating Seat Cushions, to reduce reduce the likelihood of back injuries to pilots during hard landings or crashes, will be also investigated for modification.

DEVELOPMENT STATUS/MAJOR DEVELOPMENT MILESTONES: These upgrades are proprietary, non-developmental items used in other BHTI produced military and FAA certified commercial helicopters.

FINANCIAL PLAN: (TOA, \$ in Millions)

	Prior Years		FY 2003		FY 2004		FY 2005		FY 2006		FY 2007		FY 2008		FY 2009		To Complete		Total		
	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	
RDT&E																					
PROCUREMENT																					
Installation Kits																					
ECP # BHTI-1710 (TDS)	131	6.3																			
ECP# HI-CP-24-99 Rotor Brake Quill	136	1.6																			
ECP# HI-CP-19-98 Aural Alert Unit	103	Note #3																			
Smart Torque Indicator	68	1.0			200	2.3															
ECP# NAWCWD 97GG023R2 M240	210	0.1																			
ECP# 98-002 GAU-17 Gun Ctrl Unit	79	0.3																			
ECP#98-0014 IDAS Mounts	110	0.7																			
Tailboom Strakes			119	4.0																	
Installation Kits N/R		1.3																			
Aural Alert Unit Install. Equipment	103	0.6																			
Engineering Change Orders		0.0																			
Data		0.7																			
Training Equipment	4	1.3																			
Support Equipment	100	0.4																			
ILS		1.0																			
Other Support		5.4		0.1		0.4		0.2													
Interim Contractor Support																					
Installation Cost	229	0.8																			
<b>Total Procurement</b>		<b>21.5</b>		<b>4.1</b>		<b>2.7</b>		<b>0.2</b>													

- Notes:
1. Totals may not add due to rounding
  2. Asterisk indicates amount less than \$50K
  3. Aural Alert Unit Installation Kit Cost included in Aural Alert Unit Installation Equipment cost.

**Exhibit P-3a**

MODELS OF SYSTEMS AFFECTED: HH-1N/UH-1N MODIFICATION TITLE: H-1N SAFETY UPGRADES (OSIP 18-98)

INSTALLATION INFORMATION:

METHOD OF IMPLEMENTATION: CONTRACTOR FIELD TEAM AND ORGANIC MOD TEAM

ADMINISTRATIVE LEADTIME: 2 Months PRODUCTION LEADTIME: 6 Months

CONTRACT DATES: FY 2003: \_\_\_\_\_ FY 2004: \_\_\_\_\_ FY 2005: \_\_\_\_\_

DELIVERY DATE: FY 2003: \_\_\_\_\_ FY 2004: \_\_\_\_\_ FY 2005: \_\_\_\_\_

(\$ in Millions)

Cost:	Prior Years		FY 2003		FY 2004		FY 2005		FY 2006		FY 2007		FY 2008		FY 2009		To Complete		TOTAL	
	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$
FY 2002 & PY (229) kits	229	0.8																	229	0.8
FY 2003 ( ) kits																				
FY 2004 ( ) kits																				
FY 2005 ( ) kits																				
FY 2006 ( ) kits																				
FY 2007 ( ) kits																				
FY 2008 ( ) kits																				
FY 2009 ( ) kits																				
<b>TOTAL</b>	<b>229</b>	<b>0.8</b>																	<b>229</b>	<b>0.8</b>

Installation Schedule reflects 103 AAUs and 126 TDS.

FY 2002 & Prior	FY 2002				FY 2003				FY 2004				FY 2005				FY 2006			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
In	213	16																		
Out	213	16																		

	FY 2007				FY 2008				FY 2009				To Complete	TOTAL
	1	2	3	4	1	2	3	4	1	2	3	4		
In														229
Out														229

Exhibit P-40, BUDGET ITEM JUSTIFICATION								DATE: February 2004			
APPROPRIATION/BUDGET ACTIVITY								P-1 ITEM NOMENCLATURE			
Aircraft Procurement, Navy/APN-5 Aircraft Modifications								H-53 Modifications			
Program Element for Code B Items:								Other Related Program Elements			
	Prior Years	ID Code	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	To Complete	Total
QTY		A									0
COST (In Millions)	332.4	A	27.8	24.4	9.8	9.0	7.7	15.9	16.2	61.9	505.0
<p>This line item funds modifications to the CH-53D/CH-53E/MH-53E aircraft. There are 38 MH-53E Helicopters; 151 CH-53E Helicopters; and 40 CH-53D Helicopters. The CH-53E is a seven blade main rotor and a four-blade canted tail rotor helicopter powered by three T64-GE-416A turbo shaft engines on the CH-53E while the CH-53D has six main rotor blades and two T64-GE-413 engines. The CH-53D/E aircraft are capable of both land and ship based transport of heavy equipment, supplies, and personnel. The MH-53E is similar to the CH-53E with additional capabilities for Airborne Mine Countermeasures (AMCM), Vertical On-Board Delivery (VOD), and Special Missions which require longer range and more precise navigation than that of the CH-53E. The overall goal of the modifications budgeted in FY05 is increased communication and navigation, night vision capability, and fleet operation and safety performance in the H-53 community.</p> <p>The specific modifications budgeted and programmed are:</p>											
(TOA, \$ in Millions)											
OSIP No.	Description	Prior Years	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	To Complete	Total
23-91	MH53E ENGINE ENHANCEMENT	45.1	0.1								45.2
11-92	AN/ARC-210 ECCM RADIO	21.4	0.9	0.4	0.4						23.2
12-92	CH-53E HELICOPTER NIGHT VISION SYSTEM	131.6	6.2	5.4	7.1	5.9	7.7	15.9	16.2	61.9	257.9
20-92	MH GLOBAL POSITIONING SYSTEM (GPS)	41.0	0.7								41.8
21-94	(ANVIS/HUD) AN/AVS-7	19.2	0.8								20.7
20-97	ATTENUATING TROOP SEATS	24.9	6.2	3.4							34.4
	DERF (non add)	1.8									
6-98	AN/APR-39A (V) 2 UPGRADE	3.4									3.4
7-98	INTEGRATED MECHANICAL DIAGNOSTIC SYSTEM	40.2	4.7	5.6							50.4
09-01	NACELLES	5.1	1.9	3.0	2.3	3.0					15.4
10-02	CH-53E AVIONICS COMM NAV SURVEILLANCE/TRAF M	0.4	0.6								0.9
18-03	COMMON DEFENSE WEAPON		5.9								11.8
		332.4	27.8	24.4	9.8	9.0	7.7	15.9	16.2	61.9	505.0
<b>TOTAL RESERVE FUNDING INCLUDED IN TOTAL</b>		<b>2.1</b>	<b>6.5</b>	<b>6.6</b>	<b>6.7</b>	<b>6.9</b>	<b>7.1</b>	<b>7.2</b>	<b>7.3</b>		
<p>Note: Totals may not add due to rounding.                  Note: * indicates amounts less than 50K                  Note: CNSATM OSIP (10-02) profile includes funding from AN/APR-39A (V) 2 Upgrade and SLEP. Per N78/DCSAPW, funding was reprogrammed into CNSATM due to a higher Marine Corp priority in meeting CNSATM requirements.                  Note: FY 2002 DERF funding augments OSIP 20-97</p>											

Exhibit P-3a Individual Modification

MODIFICATION TITLE: MH-53E ENGINE UPGRADE T64-GE-419 (OSIP 23-91)

MODELS OF SYSTEMS AFFECTED: CH-53E (1), MH-53E (44 - 32 Active, 12 Reserve), 45 Total TYPE MODIFICATION: SAFETY

DESCRIPTION/JUSTIFICATION: The 64-GE-419 engine will produce 5,000 shaft horsepower at sea level, which will correct an OPEVAL deficiency concerning MH-53E one engine inoperative performance during mine countermeasure operations. Applicable ECP: 2626R1

DEVELOPMENT STATUS/MAJOR DEVELOPMENT MILESTONES: The engine modification will be accomplished in two phases: the first phase forward fitted more durable, internal components (blades, shrouds, etc.) into 416 production engines beginning in FY99. These internally modified 416 engines are designated 416A. The components offer immediate rewards of longer engine life and reduced probability of engine failure. Early incorporation has saved a total of \$7M in down-stream retrofit costs. In addition, the components serve as the core of the longer range effort to upgrade power to 5,000 horsepower. Qualification was completed in FY90. The second phase will backfit the applicable upgraded external engine components (fuel controls and pump) plus associated airframe changes (engine/engine-bay cooling and torque/fire warning mods.) FY91 procured VAL/VER for MH-53E. FY93 procured VAL/VER for CH-53E. The upgraded engine is designated the T64-GE-419.

FINANCIAL PLAN: (TOA, \$ in Millions)

	Prior Years		FY 2003		FY 2004		FY 2005		FY 2006		FY 2007		FY 2008		FY 2009		To Complete		Total		
	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	
RDT&E																					
PROCUREMENT																					
Installation Kits																					
Aircraft Kit -MH (32 Act, 12 Res)	44	7.5																		44	7.5
Aircraft Kit - CH	1	0.2																		1	0.2
Engine Oil Cooler Mod MH	90	3.5																		90	3.5
Installation Kits N/R		19.5																			19.5
Installation Equipment																					
Installation Equipment N/R																					
Engineering Change Orders																					
Data		2.5		*																	2.6
Training Equipment	4	0.8																		4	0.8
Support Equipment		0.8																			0.8
ILS		1.1		*																	1.1
Other Support		3.6																			3.6
Interim Contractor Support																					
Installation Cost	46	5.6																		46	5.6
<b>Total Procurement</b>		<b>45.1</b>		<b>0.1</b>																	<b>45.2</b>

Notes:

1. Totals may not add due to rounding
2. Asterisk indicates amount less than \$50K
3. 41 MH INSTALLS (3 A/C IN STORAGE)

Exhibit P-3a

MODELS OF SYSTEMS AFFECTED: CH-53E (1), MH-53E (44 - 32 Active, 12 Reserve), 45 Total      MODIFICATION TITLE: MH-53E ENGINE UPGRADE T54-GE-419 (OSIP 23-91)

INSTALLATION INFORMATION:

METHOD OF IMPLEMENTATION: Naval Aviation Depot (NADEP) will modify the engines. Airframe modifications and engines will be performed concurrent with (SDLM) by NADEP and Interservice Field Mod Teams (FMT)

ADMINISTRATIVE LEADTIME: 3 Months      PRODUCTION LEADTIME: 33 Months

CONTRACT DATES: FY 2003: \_\_\_\_\_ FY 2004: \_\_\_\_\_ FY 2005: \_\_\_\_\_

DELIVERY DATE: FY 2003: \_\_\_\_\_ FY 2004: \_\_\_\_\_ FY 2005: \_\_\_\_\_

(\$ in Millions)

Cost:	Prior Years		FY 2003		FY 2004		FY 2005		FY 2006		FY 2007		FY 2008		FY 2009		To Complete		TOTAL		
	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	
FY 2002 & PY (46) kits	46	5.6																		46	5.6
FY 2003 ( ) kits																					
FY 2004 ( ) kits																					
FY 2005 ( ) kits																					
FY 2006 ( ) kits																					
FY 2007 ( ) kits																					
FY 2008 ( ) kits																					
FY 2009 ( ) kits																					
To Complete ( ) kits																					
<b>TOTAL</b>	<b>46</b>	<b>5.6</b>																		<b>46</b>	<b>5.6</b>

Installation Schedule

	FY2002 & Prior	FY 2003				FY 2004				FY 2005				FY 2006				FY 2006				
		1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	
In	46																					
Out	46																					

	FY 2008				FY 2009				To Complete	TOTAL
	1	2	3	4	1	2	3	4		
In										46
Out										46

Exhibit P-3a Individual Modification

MODIFICATION TITLE: AN/ARC-210 ECCM Radio (OSIP 11-92)

MODELS OF SYSTEMS AFFECTED: CH-53D (47) (Note 3), CH-53E (158)(Note 4) , MH-53E (44), 249 Total TYPE MODIFICATION: MISSION/PERFORMANCE ENHANCEMENT

DESCRIPTION/JUSTIFICATION: The AN/ARC-210 is a combination UHF/VHF, AM/FM jam-resistant radio that was developed for ECCM interoperability with the Air Force, Army, and NATO. The radio provides dual UHF capability for CV based TACAIR; VHF FM for close air support and maritime channels; VHF AM for air traffic control; and ECCM capabilities using the Air Force developed waveforms (UHF-AM HAVE QUICK I and II), and the Army developed waveform (VHF-FM SINGGARS). The AN/ARC-210 can be controlled by either a remote control unit or via a MIL-STD-1553 multiplex data bus. The ECCM parameters and single channel preset information can be loaded via a CYZ-10 Data Transfer Device (DTD). The fill information can consist of word-of-day for HAVE QUICK and the KGV-10 transec variable, hopsets and frequency lock-out tables for SINGGARS. Applicable ECPs: CH-53E: PNCLA-4, CH-53D: PNCLA-61, MH-53E: CHPT-006

DEVELOPMENT STATUS/MAJOR DEVELOPMENT MILESTONES: Procurement of the validation/verification kits occurred in August 1992. CH validation/verification efforts were procured in FY 1995. Procurement of validation/verification for the MH-53E took place in FY97. Due to the deactivation of RH-53D's, the incorporation of modifications in RH-53D aircraft was canceled.

FINANCIAL PLAN: (TOA, \$ in Millions)

	Prior Years		FY 2003		FY 2004		FY 2005		FY 2006		FY 2007		FY 2008		FY 2009		To Complete		Total		
	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	
RDT&E																					
PROCUREMENT																					
Installation Kits																					
CH-53E A Kit (LBAD) Note 6	158	1.7																	158	1.7	
CH-53D A KIT (LBAD) Note 3	46	0.8																	46	0.8	
CH-53D Rev B Kit Note 5	45	0.4																	45	0.4	
MH-53E A KIT (LBAD)	31	0.5	3	0.1	8	0.1													42	0.7	
CH-53D ATABS VAL/VER KIT	1	*																	1	*	
CH-53D ATABS A KIT Note 7	43	0.2																	43	0.2	
CH-53D APX-72 A KIT	40	0.2																	40	0.2	
Installation Kits N/R		1.5																		1.5	
Installation Equipment																					
GFE ITEMS - CHE Note 4	4	0.5																	4	0.5	
Installation Equipment N/R		0.3																		0.3	
Engineering Change Orders																					
Data		1.9																		1.9	
Training Equipment	7	0.7																	7	0.7	
Support Equipment																					
ILS		0.4																		0.4	
Other Support		4.9																		4.9	
Interim Contractor Support																					
Installation Cost	297	7.6	9	0.8	14	0.3	8	0.4											328	9.1	
<b>Total Procurement</b>		<b>21.4</b>		<b>0.9</b>		<b>0.4</b>		<b>0.4</b>												<b>23.2</b>	

- Notes:
- Totals may not add due to rounding
  - Asterisk indicates amount less than \$50K
  - 44 installs planned. 3 a/c struck since procurement
  - 4 radios (GFE) procured by PMA-261 for Val/Ver. Balance procured by PMA-209
  - Includes 44 CHD Rev B installs
  - Only 150 Installations
  - 43 CH-53D ATABS A Kits are O level (no cost) installs

Exhibit P-3a

MODELS OF SYSTEMS AFFECTED: CH-53D (47), CH-53E (158), MH-53E (44),249 Total      MODIFICATION TITLE: AN/ARC-210 ECCM Radio (OSIP 11-92)

INSTALLATION INFORMATION:

METHOD OF IMPLEMENTATION: Concurrent with Naval Aviation Depot (NADEP) standard depot level maintenance (SDLM), augmented by NADEP and interservice field modification teams (FMTs).

ADMINISTRATIVE LEADTIME: 2 Months      PRODUCTION LEADTIME: 13 Months

CONTRACT DATES:      FY 2003: Nov 02      FY 2004: Nov 03      FY 2005: Nov 04

DELIVERY DATE:      FY 2003: Dec 03      FY 2004: Dec 04      FY 2005: Dec 05

(\$ in Millions)

Cost:	Prior Years		FY 2003		FY 2004		FY 2005		FY 2006		FY 2007		FY 2008		FY 2009		To Complete		TOTAL			
	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$		
FY 2002 & PY (277) kits	267	7.6	9	0.790	1															277	8.4	
FY 2003 (3) kits					3	0.2															3	0.2
FY 2004 (8) kits							8	0.4													8	0.4
FY 2005 ( ) kits																						
FY 2006 ( ) kits																						
FY 2007 ( ) kits																						
FY 2008 ( ) kits																						
FY 2009 ( ) kits																						
To Complete ( ) kits																						
<b>TOTAL</b>	<b>267</b>	<b>7.6</b>	<b>9</b>	<b>0.8</b>	<b>4</b>	<b>0.2</b>	<b>8</b>	<b>0.4</b>												<b>288</b>	<b>9.0</b>	

Note:

- 1. Includes 7 Trainer Installations
- 2. FY2001 installations include 1 kit bought prior w/NGRE funds.

Installation Schedule

	FY 2002 & Prior	FY 2003				FY 2004				FY 2005				FY 2006				
		1	2	3	4	1	2	3	4	1	2	3	4					
In	267	2	2	2	3	1	1	1	1	2	2	2	2					
Out	267	2	2	2	3	1	1	1	1	2	2	2	2					

	FY 2007				FY 2008				FY 2009				To Complete	TOTAL	
	1	2	3	4	1	2	3	4	1	2	3	4			
In															288
Out															288

Exhibit P-3a

MODELS OF SYSTEMS AFFECTED: CH-53D APX-72 MODIFICATION TITLE: AN/ARC-210 ECCM Radio (OSIP 11-92)

INSTALLATION INFORMATION:

METHOD OF IMPLEMENTATION: Concurrent with (NADEP) (SDLM), augmented by NADEP and interservice field modification teams (FMTs).

ADMINISTRATIVE LEADTIME: 1 Months PRODUCTION LEADTIME: 2 Months

CONTRACT DATES: FY 2003: \_\_\_\_\_ FY 2004: \_\_\_\_\_ FY 2005: \_\_\_\_\_

DELIVERY DATE: FY 2003: \_\_\_\_\_ FY 2004: \_\_\_\_\_ FY 2005: \_\_\_\_\_

(\$ in Millions)

Cost:	Prior Years		FY 2003		FY 2004		FY 2005		FY 2006		FY 2007		FY 2008		FY 2009		To Complete		TOTAL		
	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	
FY 2002 & PY (40) kits	30	0.1			10	0.1														40	0.3
FY 2003 ( ) kits																					
FY 2004 ( ) kits																					
FY 2005 ( ) kits																					
FY 2006 ( ) kits																					
FY 2007 ( ) kits																					
FY 2008 ( ) kits																					
FY 2009 ( ) kits																					
To Complete ( ) kits																					
<b>TOTAL</b>	<b>30</b>	<b>0.1</b>			<b>10</b>	<b>0.1</b>														<b>40</b>	<b>0.3</b>

Note: (8) Hour Installation

Installation Schedule

	FY 2002 & Prior	FY 2003				FY 2004				FY 2005				FY 2006							
		1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4				
In	30						10														
Out	30						2	8													

	FY 2007				FY 2008				FY 2009				To Complete	TOTAL
	1	2	3	4	1	2	3	4	1	2	3	4		
In														40
Out														40

Exhibit P-3a Individual Modification

MODIFICATION TITLE: CH-53E HELICOPTER NIGHT VISION SYSTEM (HNVS)(OSIP 12-92)

MODELS OF SYSTEMS AFFECTED: CH-53E (157) (Note 3) TYPE MODIFICATION: MISSION/PERFORMANCE ENHANCEMENT

DESCRIPTION/JUSTIFICATION: The Helicopter Night Vision System (HNVS) will provide an infrared night vision system for the CH-53E transport helicopters. The HNVS provides an improved night/all weather mission capability. This OSIP includes integration of the off the shelf APN-217(V)6 Doppler Navigation System and AAQ-16B/29/34 FLIR. Future configuration for CH-53E transport helicopter will be the AAQ-34 FLIR due to obsolescence issues for OEM with AAQ-29. Program is structured to replace AAQ-16 and AAQ-29 with AAQ-34 to establish a single configuration. Applicable ECP: 0231-E001

DEVELOPMENT STATUS/MAJOR DEVELOPMENT MILESTONES: The AAQ-16B/29 FLIR is a non-developmental Item (NDI) currently installed on a number of U.S. Army, Air Force, and Navy helicopters. DT-IIIA on the CH-53E/HNVS was completed in the third quarter FY 94. Extension of application for CH-53E was granted first quarter FY 95. The integration of the AAQ-34 FLIR will be accomplished in FY 2013.

FINANCIAL PLAN: (TOA, \$ in Millions)

	Prior Years		FY 2003		FY 2004		FY 2005		FY 2006		FY 2007		FY 2008		FY 2009		To Complete		Total		
	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	
RDT&E																					
PROCUREMENT																					
Installation Kits																					
A Kits	138	9.3	18	2.3																	
Installation Kits N/R		3.1																			
Installation Equipment																					
CH-53E installation equipment	159	16.8	36	2.4																	
CH-53E TFU/SDC AAQ-16B/29	223	72.3																			
CH-53E TFU/SDC AAQ-34			1	0.6	7	4.0	11	6.6													
Installation Equipment N/R																					
Engineering Change Orders																					
Data		0.6				0.1															
Training Equipment	3	8.4																			
Support Equipment																					
ILS		1.0																			
Other Support		11.5		0.8		0.7		0.3													
Interim Contractor Support																					
Installation Cost (Note 4)	140	8.7	1	*	12	0.6	5	0.2													
<b>Total Procurement</b>		<b>131.6</b>		<b>6.2</b>		<b>5.4</b>		<b>7.1</b>													

- Notes:
- Totals may not add due to rounding
  - Asterisk indicates amount less than \$50K
  - Though the program was truncated (from 166 kits to 138) by N880 and HQMC in FY'97, 19 additional Kits were approved and funded per N78 and HQMC in October 2001.
  - 1 A-Kit installed in FY03, 12 A-Kits installed in FY04 and 5 A-Kits installed in FY05 by Field Mod Teams. B-Kits (TFUs) installed at O-Level.

Exhibit P-3a

MODELS OF SYSTEMS AFFECTED: CH-53E (157) (See Note 3) MODIFICATION TITLE: CH-53E HELICOPTER NIGHT VISION SYSTEM (HNVS)(OSIP 12-92)

INSTALLATION INFORMATION:

METHOD OF IMPLEMENTATION: 14 A-Kits installed in FY04 and 5 A-Kits installed in FY05 by Field Mod Teams. B-Kits (TFUs) installed at O-Level.

ADMINISTRATIVE LEADTIME: 2 Months PRODUCTION LEADTIME: 9 Months

CONTRACT DATES: FY 2003: Dec-02 FY 2004: \_\_\_\_\_ FY 2005: \_\_\_\_\_

DELIVERY DATE: FY 2003: Sep-03 FY 2004: \_\_\_\_\_ FY 2005: \_\_\_\_\_

(\$ in Millions)

Cost:	Prior Years		FY 2003		FY 2004		FY 2005		FY 2006		FY 2007		FY 2008		FY 2009		To Complete		TOTAL		
	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	
FY 2002 & PY (140) kits	140	8.7																		140	8.7
FY 2003 (18) kits			1	*	12	0.7	5	0.2												18	0.9
FY 2004 ( ) kits																					
FY 2005 ( ) kits																					
FY 2006 ( ) kits																					
FY 2007 ( ) kits																					
FY 2008 ( ) kits																					
FY 2009 ( ) kits																					
To Complete ( ) kits																					
<b>TOTAL</b>	<b>140</b>	<b>8.7</b>	<b>1</b>	<b>*</b>	<b>12</b>	<b>0.7</b>	<b>5</b>	<b>0.2</b>												<b>158</b>	<b>9.6</b>

Installation Schedule

	FY 2002 & Prior	FY 2003				FY 2004				FY 2005				FY 2006				FY 2007				
		1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	
In	140				1	1	3	4	4	5												
Out	140				1	1	3	4	4	5												

	FY 2008				FY 2009				To Complete	TOTAL
	1	2	3	4	1	2	3	4		
In										158
Out										158

Exhibit P-3a Individual Modification

MODIFICATION TITLE: MH Global Positioning System (NCS) (GPS) (OSIP 20-92)

MODELS OF SYSTEMS AFFECTED: MH-53E (32 Active, 12 Reserve) - 44 Total TYPE MODIFICATION: SAFETY

DESCRIPTION/JUSTIFICATION: The Global Positioning System (GPS) is a space-based radio positioning navigation system designed to provide highly accurate navigation data (position, velocity, and time) to properly equipped users. The GPS integration into the MH-53E was to be originally accomplished via installation of the Navigation/Communication System (NCS). This system met all AMCM and GIG (DOD guidance for integration of GPS) requirements. Due to funding constraints, the NCS was cancelled in FY-99. As a result, the OSIP below was amended to reflect cancellation of the NCS system and reconfiguration of two aircraft previously outfitted with NCS, and show the procurement and installation of the MAGR 2000 GPS system. A two-phase approach removes the Omega Navigation System (ONS) and repositions the GPS-3A receiver to the right e-bay (Phase I). Phase II replaces the Phase I GFE with MAGR 2000/CDNU. Applicable ECP: CH53-011

DEVELOPMENT STATUS/MAJOR DEVELOPMENT MILESTONES: The NAVSTAR GPS program completed Milestone IIIB in January 1992. Operational Testing (OT-IIIC) commenced in the third quarter FY95 with a recommendation of operationally suitable/operationally effective. In Phase I, the GPS-3A receiver was repositioned-no test required. The MAGR 2000 system (Phase II) in the MH-53E completed OT-IIID in October 2002. Fleet installations will be completed in FY03. This will be the Navy "lead the fleet" system implementation of GPS non-precision approach (NPA) capability.

FINANCIAL PLAN: (TOA, \$ in Millions)

	Prior Years		FY 2003		FY 2004		FY 2005		FY 2006		FY 2007		FY 2008		FY 2009		To Complete		Total		
	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	
RDT&E																					
PROCUREMENT																					
Installation Kits																					
MH-53E NCS	4	5.2																		4	5.2
MH-53E GPS Kit (ECP CH53-011)	84	2.7																		84	2.8
Installation Kits N/R		2.3																			2.3
Installation Equipment																					
GFE Reconfig																					
Installation Equipment N/R		0.4																			0.4
Engineering Change Orders		0.2																			0.2
Data		1.8																			1.8
Training Equipment	4	10.7																		4	10.7
Support Equipment		0.2																			0.2
ILS		1.2																			1.2
Other Support		12.5		0.1		0.1															12.7
Interim Contractor Support																					
Installation Cost	72	4.0	13	0.6		*														85	4.5
<b>Total Procurement</b>		<b>41.0</b>		<b>0.7</b>		<b>0.1</b>															<b>41.9</b>

Notes:

1. Totals may not add due to rounding
2. Asterisk indicates amount less than \$50K
3. Total Kit Qty includes 2 VAL/VER Kits and 2 Reconfigured Kits.



Exhibit P-3a Individual Modification

MODIFICATION TITLE: AVIATOR NIGHT VISION IMAGING SYSTEM HEAD-UP DISPLAY (ANVIS/HUD) AN/AVS-7 (OSIP 21-94)

MODELS OF SYSTEMS AFFECTED: CH-53E 166 Aircraft & 4 Trainers TYPE MODIFICATION: MISSION/PERFORMANCE ENHANCEMENT

DESCRIPTION/JUSTIFICATION: This modification incorporates the use of a Head-Up Display (HUD) with the AN/AVS-6 Night Vision Goggles (NVG). Helicopter crews perform missions at night using NVGs. Although NVGs provide aircrews with enhanced capability to operate during periods of darkness, they increase pilot workload due to critical flight instruments being placed outside of the visual scan. The ANVIS/HUD allows critical flight information to be displayed through the NVGs, thereby decreasing pilot workload and enhancing flight safety and mission effectiveness.  
 Applicable ECPs: CH-53E - PN47; CH-53D - PN61R1

DEVELOPMENT STATUS/MAJOR DEVELOPMENT MILESTONES: The ANVIS/HUD is a nondevelopmental system currently in use on the USMC UH-1N and CH-46, and the US Army UH-60 and CH-47. This system is being procured under an Army Contract with validation installation and DT/OT completed in FY 1996.

FINANCIAL PLAN: (TOA, \$ in Millions)

	Prior Years		FY 2003		FY 2004		FY 2005		FY 2006		FY 2007		FY 2008		FY 2009		To Complete		Total		
	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	
RDT&E																					
PROCUREMENT																					
Installation Kits																					
CH-53D Kit ECP PN61R1																					
CH-53E Kit ECP PN47	166	2.7																		166	2.7
Installation Kits N/R		3.6																			3.6
Installation Equipment																					
CH-53E Install Equip (incl 4 trainers)	170	5.3																		170	5.3
Installation Equipment N/R																					
Engineering Change Orders																					
Data		0.3																			0.3
Training Equipment	4	0.5																		4	0.5
Support Equipment		0.5																			0.5
ILS		0.4																			0.4
Other Support		3.6		0.3																	3.9
Interim Contractor Support																					
Installation Cost	134	2.5	18	0.5	18	0.6														170	3.6
<b>Total Procurement</b>		<b>19.2</b>		<b>0.8</b>		<b>0.6</b>															<b>20.7</b>

- Notes:
1. Totals may not add due to rounding
  2. Asterisk indicates amount less than \$50K

**Exhibit P-3a**

MODELS OF SYSTEMS AFFECTED: CH-53E 166 & 4 Trainers MODIFICATION TITLE: AVIATOR NIGHT VISION IMAGING SYSTEM HEAD-UP DISPLAY (ANVIS/HUD) AN/AVS-7 (OSIP 21-94)

INSTALLATION INFORMATION:

METHOD OF IMPLEMENTATION: Concurrent with Standard Depot Level Maintenance (SDLM) augmented by Interservice Field Mod Teams

ADMINISTRATIVE LEADTIME: 7 Months PRODUCTION LEADTIME: 8 Months

CONTRACT DATES: FY 2003: \_\_\_\_\_ FY 2004: \_\_\_\_\_ FY 2005: \_\_\_\_\_

DELIVERY DATE: FY 2003: \_\_\_\_\_ FY 2004: \_\_\_\_\_ FY 2005: \_\_\_\_\_

(\$ in Millions)

Cost:	Prior Years		FY 2003		FY 2004		FY 2005		FY 2006		FY 2007		FY 2008		FY 2009		To Complete		TOTAL		
	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	
FY 2002&PY(170) kits	134	2.5	18	0.5	18	0.6														170	3.6
FY 2003 ( ) kits																					
FY 2004 ( ) kits																					
FY 2005 ( ) kits																					
FY 2006 ( ) kits																					
FY 2007 ( ) kits																					
FY 2008 ( ) kits																					
FY 2009 ( ) kits																					
To Complete ( ) kits																					
<b>TOTAL</b>	<b>134</b>	<b>2.5</b>	<b>18</b>	<b>0.5</b>	<b>18</b>	<b>0.6</b>														<b>170</b>	<b>3.6</b>

Installation Schedule

	FY 2002 & Prior	FY 2003				FY 2004				FY 2005				FY 2006							
		1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4				
In	134	5	5	5	3	5	5	5	3												
Out	134	5	5	5	3	5	5	5	3												

	FY 2007				FY 2008				FY 2009				To Complete	TOTAL
	1	2	3	4	1	2	3	4	1	2	3	4		
In														170
Out														170

Exhibit P-3a Individual Modification

MODIFICATION TITLE: ATTENUATING TROOP SEATS (OSIP 20-97)

MODELS OF SYSTEMS AFFECTED: CH-53D (46), CH-53E (154), MH-53E (2) TYPE MODIFICATION: SAFETY

DESCRIPTION/JUSTIFICATION: Utility and Troop transport mission increasing in importance. Current troop/passenger seats are 1950 generation. Design does not provide impact protection of current rotorcraft seat designs. The impulsive type loading experienced during survivable mishaps produces amplified seat/floor anchor loads and potentially injurious occupant decelerations. Due to this operational deficiency, NDI crashworthy troop seat program established. NDI are lightweight off-the-shelf seats that provide protection by limiting an occupants inertial loading to survivable levels by attenuating impact forces to below survivable ranges and enables the occupant to rapidly egress a downed aircraft are being sought.

DEVELOPMENT STATUS/MAJOR DEVELOPMENT MILESTONES: NDI procedures utilized for the Procurement, Installation and Support of the seats for all 46 CH-53D Helicopters. Funding for the 46 seats and associated requirements were appropriated in 1997. Program consists of a one-time procurement with a turn-key installation approach. FY-98 through FY03 provides for procurement, installation, and support of the CH-53E and MH-53E helicopters.

FINANCIAL PLAN: (TOA, \$ in Millions)

	Prior Years		FY 2003		FY 2004		FY 2005		FY 2006		FY 2007		FY 2008		FY 2009		To Complete		Total		
	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	
RDT&E																					
PROCUREMENT																					
Installation Kits																					
CH-53D Kit	46	4.6																		46	4.6
CH-53E Kit	123	9.5	31	2.4	26	2.0														180	13.9
MH-53E Kit	2	0.4																		2	0.4
Installation Kits N/R		1.3																			1.3
Installation Equipment																					
Seat testing		0.7																			0.7
Installation Equipment N/R																					
Engineering Change Orders		0.5																			0.5
Data		0.7		*		*															0.8
Training Equipment		*																			*
Support Equipment																					
I.L.S		0.3																			0.3
Other Support		6.4		1.8		0.9															9.1
Interim Contractor Support																					
Installation Cost	74	2.0	128	1.9	26	0.5														228	4.4
<b>Total Procurement</b>		<b>26.7</b>		<b>6.2</b>		<b>3.4</b>															<b>36.2</b>

Notes:

1. Totals may not add due to rounding
2. Asterisk indicates amount less than \$50K
3. Purchased 24 CH-53E kits with FY02 DERF funding. APN-5 will pay for installs.

Exhibit P-3a

MODELS OF SYSTEMS AFFECTED: CH-53D (46), CH-53E (154), MH-53E (2) MODIFICATION TITLE: ATTENUATING TROOP SEATS (OSIP 20-97)

INSTALLATION INFORMATION:

METHOD OF IMPLEMENTATION: Contractor Field Modification Teams and SDLMs

ADMINISTRATIVE LEADTIME: 1 Months PRODUCTION LEADTIME: 8 on initial buy Months

CONTRACT DATES: FY 2003: Nov-02 FY 2004: Feb-04 FY 2005: \_\_\_\_\_

DELIVERY DATE: FY 2003: May-03 FY 2004: Aug-04 FY 2005: \_\_\_\_\_

(\$ in Millions)

Cost:	Prior Years		FY 2003		FY 2004		FY 2005		FY 2006		FY 2007		FY 2008		FY 2009		To Complete		TOTAL		
	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	
FY 2002 & PY (171) kits	74	2.0	97	1.4																171	3.5
FY 2003 (31) kits			31	0.5																31	0.5
FY 2004 (26) kits					26	0.5														26	0.5
FY 2005 ( ) kits																					
FY 2006 ( ) kits																					
FY 2007 ( ) kits																					
FY 2008 ( ) kits																					
FY 2009 ( ) kits																					
To Complete ( ) kits																					
<b>TOTAL</b>	<b>74</b>	<b>2.0</b>	<b>128</b>	<b>1.9</b>	<b>26</b>	<b>0.5</b>														<b>228</b>	<b>4.4</b>

Installation Schedule

	FY 2002 & Prior	FY 2003				FY 2004				FY 2005				FY 2006				FY 2007				
		1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	
In	74	18	18	18	18	18	18	25	9	6	6											
Out	74	14	18	18	18	18	18	25	13	6	6											

	FY 2008				FY 2009				To Complete	TOTAL
	1	2	3	4	1	2	3	4		
In										228
Out										228

Exhibit P-3a

Individual Modification

MODIFICATION TITLE: AN/APR-39A (V) 2 UPGRADE (OSIP 6-98)

MODELS OF SYSTEMS AFFECTED: CH-53E/MH-53E (165) CH-53E, (44) MH-53E TYPE MODIFICATION: MISSION/MISSION ENHANCEMENT

DESCRIPTION/JUSTIFICATION: The AN/APR-39A (V) 2 is a passive threat warning system primarily intended for use on helicopters and slow fixed-wing aircraft. Its purpose is to monitor the RF environment and detect, analyze, discriminate, identify and prioritize threats, unknown and friendly radar and missile guidance signals. Aircrew warning is provided by means of alphanumeric symbology on a 3-inch CRT cockpit display and an aural warning via the aircraft InterCommunication System (ICS). This change is being incorporated to improve aircraft survivability by providing for detection and display of surface-to-air missile and anti-aircraft radar threats. GFE "P" kits are to be procured under common OSIP 14-90, PMA-272. ECP: H53-008R1.

DEVELOPMENT STATUS/MAJOR DEVELOPMENT MILESTONES: Retrofit installations were originally scheduled to commence in FY92 (OSIP 6-91), however, the APR-39A (V) 2 failed technical evaluation delaying modifications as originally planned. System successfully passed a Combined OPEVAL/TECHEVAL on UH-1N aircraft, during Oct 95 system was approved for retrofit on other platforms.

FINANCIAL PLAN: (TOA, \$ in Millions)

	Prior Years		FY 2003		FY 2004		FY 2005		FY 2006		FY 2007		FY 2008		FY 2009		To Complete		Total		
	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	
RDT&E																					
PROCUREMENT																					
Installation Kits																					
VAL/VER	4	0.1																		4	0.1
CH-53E																					
MH-53E																					
MH-53E Reserve																					
Installation Kits N/R		*																			*
Installation Equipment	2	0.4																		2	0.4
Installation Equipment N/R		0.4																			0.4
Engineering Change Orders																					
Data		0.2																			0.2
Training Equipment		*																			*
Support Equipment																					
ILS		0.1																			0.1
Other Support		1.8																			1.8
Interim Contractor Support																					
Installation Cost	4	0.2																		4	0.2
<b>Total Procurement</b>		<b>3.4</b>																			<b>3.4</b>

- Notes:
1. Totals may not add due to rounding
  2. Asterisk indicates amount less than \$50K

**Exhibit P-3a**

MODELS OF SYSTEMS AFFECTED: CH-53E/MH-53E 165 CH-53E, 44 MH-53E MODIFICATION TITLE: AN/APR-39A (V) 2 UPGRADE (OSIP 6-98)

INSTALLATION INFORMATION:

METHOD OF IMPLEMENTATION: Concurrent with Naval Aviation Depot (NADEP) Standard Depot Level Maintenance (SDLM), augmented by NADEP and interservice field mod teams

ADMINISTRATIVE LEADTIME: 8 Months PRODUCTION LEADTIME: 4 Months

CONTRACT DATES: FY 2003: \_\_\_\_\_ FY 2004: \_\_\_\_\_ FY 2005: \_\_\_\_\_

DELIVERY DATE: FY 2003: \_\_\_\_\_ FY 2004: \_\_\_\_\_ FY 2005: \_\_\_\_\_

(\$ in Millions)

Cost:	Prior Years		FY 2003		FY 2004		FY 2005		FY 2006		FY 2007		FY 2008		FY 2009		To Complete		TOTAL	
	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$
FY 2002 & PY (4) kits	2	0.2			2														4	0.2
FY 2003 ( ) kits																				
FY 2004 ( ) kits																				
FY 2005 ( ) kits																				
FY 2006 ( ) kits																				
FY 2007 ( ) kits																				
FY 2008 ( ) kits																				
FY 2009 ( ) kits																				
To Complete ( ) kits																				
<b>TOTAL</b>	<b>2</b>	<b>0.2</b>			<b>2</b>														<b>4</b>	<b>0.2</b>

Installation Schedule

	FY 2002 & Prior	FY 2003				FY 2004				FY 2005				FY 2006				FY 2007			
		1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
In	2								2												
Out	2							2													

	FY 2007				FY 2009				To Complete	TOTAL
	1	2	3	4	1	2	3	4		
In									4	
Out									4	

Exhibit P-3a Individual Modification

MODIFICATION TITLE: HELICOPTER INTEGRATED MECHANICAL DIAGNOSTIC SYSTEM (IMDS) (OSIP 7-98)

MODELS OF SYSTEMS AFFECTED: CH-53E - 154; MH-53E - 44 (CH-53E - (22) LRIP Quantity) TYPE MODIFICATION: SAFETY, READINESS AND MAINTAINABILITY

DESCRIPTION/JUSTIFICATION: IMD is a helicopter monitoring and diagnostics system that provides continuous on board monitoring and diagnostics of engine health, gearbox and drive train vibrations, oil debris, rotor track and balance, and crash protected Cockpit Voice and Flight Data recorder (CVFDR). CVFDR, an integral part of the IMD system, will perform the required function of a Flight Incident Recorder (FIR). An Early Operational Assessment (EOA) of a Commercial Off-the-Shelf system on two CH-53E's is scheduled for FY96-98. Lessons learned from this effort will be incorporated into the solicitation for the fleet wide IMD effort of which the H-53E is the lead platform.

DEVELOPMENT STATUS/MAJOR DEVELOPMENT MILESTONES: The H-53E prototype effort in FY98-99 was a pilot program conducted at HMT-302 to validate a production representative system prior to Milestone III decision in second quarter of FY04. Plan endorsed by MDA as of Feb. 2003. An integration verification period for the remaining H-53E platforms has been followed by LRIP production.

FINANCIAL PLAN: (TOA, \$ in Millions)

	Prior Years		FY 2003		FY 2004		FY 2005		FY 2006		FY 2007		FY 2008		FY 2009		To Complete		Total		
	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	
RDT&E																					
PROCUREMENT																					
Installation Kits																					
CH-53E A Kit	22	6.4			12	3.7													34	10.1	
MH-53E A Kit																					
MH-53E Reserve Kit																					
Installation Kits N/R		3.1																			3.1
Installation Equipment																					
Installation Equipment N/R																					
Engineering Change Orders																					
Data		0.4																			0.4
Training Equipment		*																			*
Support Equipment				*																	*
ILS		2.0		0.3		0.1															2.4
Other Support		27.7		3.2		0.6															31.5
Interim Contractor Support				0.2																	0.2
Installation Cost	10	0.6	12	0.9	12	1.2														34	2.7
<b>Total Procurement</b>		<b>40.2</b>		<b>4.7</b>		<b>5.6</b>														<b>34</b>	<b>2.7</b>

- Notes:
1. Totals may not add due to rounding
  2. Asterisk indicates amount less than \$50K

Exhibit P-3a

MODELS OF SYSTEMS AFFECTED: CH-53E - 154; MH-53E - 44 (CH-53E - (22) LRIP Quantity)      MODIFICATION TITLE: HELICOPTER INTEGRATED MECHANICAL DIAGNOSTIC SYSTEM (IMDS) (OSIP 7-98)

INSTALLATION INFORMATION:

METHOD OF IMPLEMENTATION: CONTRACTOR INSTALLED

ADMINISTRATIVE LEADTIME: 1 Months      PRODUCTION LEADTIME: 6 Months

CONTRACT DATES: FY 2003: \_\_\_\_\_      FY 2004: Jul-04      FY 2005: \_\_\_\_\_

DELIVERY DATE: FY 2003: \_\_\_\_\_      FY 2004: Jan-05      FY 2005: \_\_\_\_\_

(\$ in Millions)

Cost:	Prior Years		FY 2003		FY 2004		FY 2005		FY 2006		FY 2007		FY 2008		FY 2009		To Complete		TOTAL		
	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	
FY 2002 & PY (22) kits	10	0.6	12	0.9																22	1.5
FY 2003 ( ) kits																					
FY 2004 (12) kits					12	1.2														12	1.2
FY 2005 ( ) kits																					
FY 2006 ( ) kits																					
FY 2007 ( ) kits																					
FY 2008 ( ) kits																					
FY 2009 ( ) kits																					
To Complete ( ) kits																					
<b>TOTAL</b>	<b>10</b>	<b>0.6</b>	<b>12</b>	<b>0.9</b>	<b>12</b>	<b>1.2</b>														<b>34</b>	<b>2.7</b>

Installation Schedule

	FY 2002 & Prior	FY 2003				FY 2004				FY 2005				FY 2006				FY 2007				
		1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	
In	8	2	2	2	2	2	2	5	3	3	3											
Out	6	2	2	2	2	2	2	5	5	3	3											

	FY 2008				FY 2009				To Complete	TOTAL
	1	2	3	4	1	2	3	4		
In										34
Out										34

Exhibit P-3a Individual Modification

MODIFICATION TITLE: Engine Nacelles (09-01)

MODELS OF SYSTEMS AFFECTED: CH/MH-53E TYPE MODIFICATION: MISSION/MISSION ENHANCEMENT

DESCRIPTION/JUSTIFICATION: This modification provides improvements to the engine nacelles which are intended to decrease the maintenance man-hours expended on nacelles repair and replacement. This modification will incorporate the forward and aft engine nacelles for the CH-53E and MH-53E.

DEVELOPMENT STATUS/MAJOR DEVELOPMENT MILESTONES: Contract awarded 2nd Qtr. FY 02. O-Level Validation/Verification was completed May 03. All installations are O-Level.

FINANCIAL PLAN: (TOA, \$ in Millions)

	Prior Years		FY 2003		FY 2004		FY 2005		FY 2006		FY 2007		FY 2008		FY 2009		To Complete		Total		
	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	
RD&E																					
PROCUREMENT																					
Installation Kits																					
MH/CH-53E	46	3.2	26	1.7	42	2.8	31	2.1													
MH/CH-53E VALVER	2	0.1																			
Installation Kits N/R		0.9																			
Installation Equipment																					
Installation Equipment N/R																					
Engineering Change Orders																					
Data		0.1																			
Training Equipment																					
Support Equipment																					
ILS																					
Other Support		0.9		0.2		0.3		0.2													
Interim Contractor Support																					
Installation Cost																					
<b>Total Procurement</b>		<b>5.1</b>		<b>1.9</b>		<b>3.0</b>		<b>2.3</b>													

- Notes:
- Totals may not add due to rounding
  - Asterisk indicates amount less than \$50K

Exhibit P-3a	Individual Modification																				
MODIFICATION TITLE:	<u>CH-53E Avionics Comm Nav Surveillance/Air Traffic Management (10-02)</u>																				
MODELS OF SYSTEMS AFFECTED:	<u>CH-53E (154) &amp; Trainers (5)</u>	TYPE MODIFICATION: <u>Mission/Performance Enhancement</u>																			
<p>DESCRIPTION/JUSTIFICATION: The CNS/ATM upgrade will modernize selected avionics systems to meet EUROCONTROL Minimum Aviation Performance Standards (MASPS). Systems include IFF(CXP), VOR/ILS (MMR) and RAHRS to include Attitude Deviation Indicator (ADI) and Course Direction Indicators (CDI). These current stand-alone systems will be integrated using existing software modules into the new bus architecture. These systems will be integrated via a 1553 bus structure controlled with existing CDNU's.</p> <p>DEVELOPMENT STATUS/MAJOR DEVELOPMENT MILESTONES: Development based on existing bus structure and CDI technologies. Integration testing began second quarter FY-03.</p>																					
FINANCIAL PLAN: (TOA, \$ in Millions)																					
	Prior Years		FY 2003		FY 2004		FY 2005		FY 2006		FY 2007		FY 2008		FY 2009		To Complete		Total		
	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	
RDT&E																					
PROCUREMENT																					
Installation Kits																					
CH-53E Kit																					
Installation Kits N/R																					
Installation Equipment																					
GFE Items																					
Installation Equipment N/R																					
Engineering Change Orders																					
Data			*	0.2																	0.2
Training Equipment																					
Support Equipment																					
ILS				0.2																	0.2
Other Support			0.3	0.2																	0.5
Interim Contractor Support																					
Installation Cost *Note 3																					
<b>Total Procurement</b>			<b>0.4</b>	<b>0.6</b>																	<b>0.9</b>
Notes:																					
1. Totals may not add due to rounding																					
2. Asterisk indicates amount less than \$50K																					

Exhibit P-3a Individual Modification

MODIFICATION TITLE: CMD DEF WPN RDTEN AND PROCURMENT (OSIP 18-03)

MODELS OF SYSTEMS AFFECTED: CH-53D/E, CH-46, UH1 TYPE MODIFICATION: MISSION/MISSION ENHANCEMENT

DESCRIPTION/JUSTIFICATION: The Common Defensive Weapon System is a .50 Caliber Medium Pintle Head mounted weapon system which will provide enhanced defensive and suppressive fire for Marine Corps assault support aircraft. The CDWS consists of a M3M .50 Caliber machine gun, a medium pintle head mount with recoil dampening buffers, and an aircraft integration/mounting kit. This system will increase aircraft/aircrew survivability during assault support missions by increasing the effective range and rate of fire as compared to current systems.

DEVELOPMENT STATUS/MAJOR DEVELOPMENT MILESTONES: The M3M .50 Caliber Machine Gun is a COTS item ready for deployment. The MPH and aircraft integration kits base designs are also COTS though modifications for each T/M aircraft must still be finalized. All installs are at the O-level.

FINANCIAL PLAN: (TOA, \$ in Millions)

	Prior Years		FY 2003		FY 2004		FY 2005		FY 2006		FY 2007		FY 2008		FY 2009		To Complete		Total		
	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	
RDT&E																					
PROCUREMENT																					
CH-53D/E			36	1.2																36	1.2
CH-46			24	0.8																24	0.8
UH-1			18	0.6																18	0.6
Installation Kits N/R				0.8																	0.8
Installation Equipment																					
CH-53D/E			40	0.6	138	2.2														178	2.9
CH-46			26	0.4																26	0.4
UH-1			20	0.3																20	0.3
Installation Kits N/R																					
Installation Equipment																					
Engineering Change Order																					
DATA				0.3		0.1															0.3
Trainers, Operational						0.4															0.4
Support Equipment						1.6															1.6
ILS				0.5		0.6															1.0
Other Support				0.3		1.0															1.4
Interim Contractor Support																					
Installation Cost																					
<b>Total Procurement</b>				<b>5.9</b>		<b>5.9</b>															<b>11.8</b>

- Notes:
1. Totals may not add due to rounding
  2. Asterisk indicates amount less than \$50K

Exhibit P-40, BUDGET ITEM JUSTIFICATION						DATE: February 2004					
APPROPRIATION/BUDGET ACTIVITY Aircraft Procurement, Navy/APN-5 Aircraft Modifications						P-1 ITEM NOMENCLATURE H-60 Modifications					
Program Element for Code B Items:						Other Related Program Elements					
	Prior Years	ID Code	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	To Complete	Total
QTY		A									
COST (In Millions)	51.5	A	21.1	19.3	11.7	12.5	13.9	7.9	8.4		146.1
<p>This line item funds modifications to H-60 series aircraft. The H-60 series current inventory is comprised of: 40 HH-60H, 160 SH-60B, 74 SH-60F. The current retrofit plan is comprised of: 74 MH-60S and 36 MH-60R. The design service life of these weapon systems is 10,000 hours, the average service life remaining is as follows: SH-60B 4,946 hours, SH-60F 7,557 and HH-60H 7,691. The SH-60B is the vehicle component of the LAMPS MK III Weapon System on surface combatants. The primary missions of the SH-60B are Anti-Submarine (ASW) and Anti-Surface Warfare (ASUW). The SH-60F is an ASW, dipping sonar helicopter assigned to carrier airwings based aboard aircraft carriers (CV). The SH-60F primary mission is protection of the CV inner zone. The HH-60H is a Combat Search and Rescue (CSAR) and Special Warfare Support (SWS) helicopter assigned to carrier airwings aboard CVs and also in two reserve squadrons. SH-60B requirements are driven by the number of LAMPS MK III ships to be supported. The overall goal of the modifications budgeted is for the Gearbox Corrosion and Safety Related Systems Upgrade, Transmission Beam Fatigue, and AMCM /Armed Helo (Correction of Deficiencies) for the MH-60S and the Armed Block I Upgrade for the MH-60R. The specific modifications budgeted and programmed are:</p>											
(TOA, \$ in Millions)											
<b>OSIP No.</b>	<b>Description</b>	<b>Prior Years</b>	<b>FY 2003</b>	<b>FY 2004</b>	<b>FY 2005</b>	<b>FY 2006</b>	<b>FY 2007</b>	<b>FY 2008</b>	<b>FY 2009</b>	<b>To Complete</b>	<b>Total</b>
08-96	T-700 Engine Improvements	21.7	0.6								22.3
17-00	Helicopter Integrated Mechanical Diagnostic System (IMDS)	12.2	10.5								22.7
25-00	Sonar Improvements	13.0									13.0
06-01	H-60 Ultra Low Maintenance Battery	2.6									2.6
17-02	Advance Helicopter Emergency Egress Lighting System (ADHEELS)	2.0									2.0
08-03	Gearbox Corrosion		0.1	2.4							2.5
09-03	H-60 Safety Related Systems Upgrade		10.0	13.1	7.2	4.7	5.3	5.2	5.4		50.9
16-04	MH-60S AMCM/Armed Helo			3.8	4.5	3.3	3.8				15.4
XX-06	MH-60R Armed Block I Upgrade					4.5	4.8	2.6	3.0		14.9
	<b>Total</b>	<b>51.5</b>	<b>21.1</b>	<b>19.3</b>	<b>11.7</b>	<b>12.5</b>	<b>13.9</b>	<b>7.9</b>	<b>8.4</b>		<b>146.1</b>
<b>Note: Totals may not add due to rounding.</b>											

MODIFICATION TITLE: T-700 Engine Upgrade (OSIP 08-96)

MODELS OF SYSTEMS AFFECTED: SH-60B, SH-60F, HH-60H TYPE MODIFICATION: Operational Enhancement

DESCRIPTION/JUSTIFICATION: The Navy H-60 helicopter engine improvement modifications include the following safety and reliability improvements, auto ignition, which activates a time delay relay enabling ignition during an overspeed event and subsequent re-light, transient droop improvement (TD) which minimizes NR droop in hot/heavy gross weight environment and suitable contingency power making increased power available at high gross weight. Current inventory: 40 HH-60H, 160 SH-60B and 74 SHH-60F aircraft. Inventory includes - 1 HH-60H, currently being rebuilt at Troy, AL, 2 additional SH-60Bs designated NSH-60B, and 1 SH-60F aircraft designated YSH-60F. All the systems are being modified per ORD#s SOR 12-18, 015-05-84 and 085-05-86.

DEVELOPMENT STATUS/MAJOR DEVELOPMENT MILESTONES: The planned engine improvements are already developed and in production in Army Blackhawk helicopters. The Navy conducted flight testing of the FY 1996 validation/verification period in order to verify the operation in the Naval Hawk application.

FINANCIAL PLAN: (TOA, \$ in Millions)

	Prior Years		FY 2003		FY 2004		FY 2005		FY 2006		FY 2007		FY 2008		FY2009		To Complete		Total		
	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	
RDT&E																					
PROCUREMENT																					
Installation Kits																					
ECP 3930	281	3.1																	281	3.1	
Installation Kits N/R		1.3																			1.3
Installation Equipment																					
DECUs	562	11.0																	562	11.0	
Installation Equipment N/R																					
Engineering Change Orders																					
Data		0.4																			0.4
Training Equipment		0.5																			0.5
Support Equipment		0.2																			0.2
ILS		0.5																			0.5
Other Support		1.6																			1.6
Interim Contractor Support																					
Installation Cost	243	3.0	38	0.6																281	3.6
<b>Total Procurement</b>	<b>843</b>	<b>21.7</b>	<b>0</b>	<b>0.6</b>																<b>843</b>	<b>22.3</b>

Notes:

1. Totals may not add due to rounding
2. Asterisk indicates amount less than \$50K

Exhibit P-3a

MODELS OF SYSTEMS AFFECTED: SH-60B, SH-60F, HH-60H

MODIFICATION TITLE: T-700 Engine Improvements (OSIP 08-96)

INSTALLATION INFORMATION:

METHOD OF IMPLEMENTATION: Contractor Field Mod Team

ADMINISTRATIVE LEAD-TIME: 1 Months

PRODUCTION LEAD-TIME: 12 Months

CONTRACT DATES: FY 2003: \_\_\_\_\_

FY 2004: \_\_\_\_\_

FY 2005: \_\_\_\_\_

DELIVERY DATE: FY 2003: \_\_\_\_\_

FY 2004: \_\_\_\_\_

FY 2005: \_\_\_\_\_

(\$ in Millions)

Cost:	Prior Years		FY 2003		FY 2004		FY 2005		FY 2006		FY 2007		FY 2008		FY 2009		To Complete		TOTAL		
	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	
FY 2002 & PY (281 ) kits	243	3.0	38	0.6																281	3.6
FY 2003 ( ) kits																					
FY 2004 ( ) kits																					
FY 2005 ( ) kits																					
FY 2006 ( ) kits																					
FY 2007 ( ) kits																					
FY 2008 ( ) kits																					
FY 2009 ( ) kits																					
To Complete ( ) kits																					
<b>TOTAL</b>	<b>243</b>	<b>3.0</b>	<b>38</b>	<b>0.6</b>																<b>281</b>	<b>3.6</b>

Installation Schedule

	FY 2002 & Prior	FY 2003				FY 2004				FY 2005				FY 2006							
		1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4				
In	243				38																
Out	243				38																

	FY 2007				FY 2008				FY 2009				To Complete	TOTAL	
	1	2	3	4	1	2	3	4	1	2	3	4			
In															281
Out															281

MODIFICATION TITLE: Helicopter Integrated Mechanical Diagnostic System (IMD) (OSIP 17-00)

MODELS OF SYSTEMS AFFECTED: SH-60B, HH-60H, SH-60F, MH-60 TYPE MODIFICATION: Operational Enhancement/ Safety

DESCRIPTION/JUSTIFICATION: Integrated Mechanical Diagnostic System (IMD) is a helicopter monitoring and diagnostic systems that provides continuous onboard monitoring and diagnostic of engine health, gearbox, drive train vibrations, oil debris, and rotor track and balance.

DEVELOPMENT STATUS/MAJOR DEVELOPMENT MILESTONES: Revised Acquisition Strategy from lease concept to procurement; approved by PEO (A) December 1999. IMD Development Testing (DT) started on the SH-60B at Rotary Wing January 2000. Limited LRIP decision April 2001, for hardware based on DT-IIA. Software DT-IIB completed November 2002. DT-IIC completed December 2003. Current inventory: 40 HH-60H, 160 SH-60B and 74 SH-60F a/c. Inventory includes 1 HH-60H currently being rebuilt at Troy, AL, 2 SH-60B designated NSH-60B, and 1 additional SH-60F aircraft designated YSH-60F.

FINANCIAL PLAN: (TOA, \$ in Millions)

	Prior Years		FY 2003		FY 2004		FY 2005		FY 2006		FY 2007		FY 2008		FY2009		To Complete		Total		
	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	
RDT&E																					
PROCUREMENT																					
MH-60 Install Kits																					
Legacy A/C Install Kits	3	1.2																		3	1.2
MH-60 N/R Engineering				5.0																	5.0
Legacy A/C N/R Engineering		2.8		2.0																	4.8
Engineering Change Orders																					
Data		0.4		0.3																	0.8
Training Equipment				0.1																	0.1
Support Equipment		0.2		0.1																	0.3
ILS		1.0		0.1																	1.1
Other Support		6.0		2.8																	8.8
Interim Contractor Support																					
Installation Cost	3	0.5																			3 0.5
<b>Total Procurement</b>	<b>3</b>	<b>12.2</b>		<b>10.5</b>																	<b>3 22.7</b>

Notes:

1. Totals may not add due to rounding
2. Asterisk indicates amount less than \$50K

**Exhibit P-3a**

MODELS OF SYSTEMS AFFECTED: SH-60B, SH-60F, HH-60H MODIFICATION TITLE: Integrated Mechanical Diagnostic System (IMDS) (OSIP 17-00)

INSTALLATION INFORMATION:

METHOD OF IMPLEMENTATION: Contractor Field Mod Team

ADMINISTRATIVE LEAD-TIME: 6 Months PRODUCTION LEAD-TIME: 2 Months

CONTRACT DATES: FY 2003: \_\_\_\_\_ FY 2004: \_\_\_\_\_ FY 2005: \_\_\_\_\_

DELIVERY DATE: FY 2003: \_\_\_\_\_ FY 2004: \_\_\_\_\_ FY 2005: \_\_\_\_\_

(\$ in Millions)

Cost:	Prior Years		FY 2003		FY 2004		FY 2005		FY 2006		FY 2007		FY 2008		FY 2009		To Complete		TOTAL		
	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	
FY 2002 & PY (3) kits	3	0.5																		3	0.5
FY 2003 ( ) kits																					
FY 2004 ( ) kits																					
FY 2005 ( ) kits																					
FY 2006 ( ) kits																					
FY 2007 ( ) kits																					
FY 2008 ( ) kits																					
FY 2009 ( ) kits																					
To Complete ( ) kits																					
<b>TOTAL</b>	<b>3</b>	<b>0.5</b>																		<b>3</b>	<b>0.5</b>

Installation Schedule

	FY 2002 & Prior	FY 2003				FY 2004				FY 2005				FY 2006							
		1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4				
In	3																				
Out	2	1																			

	FY 2007				FY 2008				FY 2009				To Complete	TOTAL
	1	2	3	4	1	2	3	4	1	2	3	4		
In														3
Out														3

Exhibit P-3a

Individual Modification

MODIFICATION TITLE: Sonar Improvement (OSIP 25-00)

MODELS OF SYSTEMS AFFECTED: SH-60F

TYPE MODIFICATION: Operational Enhancement/ Safety

DESCRIPTION/JUSTIFICATION: High failure rates of the AN/AQS-13F transmitter/battery assemblies call for an improvement in reliability. The purpose of the change to the AN/AQS-13F transducer is to: 1) Replace 65 transmitter assemblies with the improved IGBT version (as previously accomplished on 68 transmitters via LECF 12991), the 2) Add auto-disconnects to battery circuitry preventing battery drainage when power is removed. The battery auto-disconnect will be accomplished on 133 transducers. Current inventory: 74 SH-60F aircraft. Inventory includes 1 additional SH-60F aircraft designated YSH-60F. FY02 procurement of New High Strength Cables replaced the existing cables on 24 SH-60F aircraft. During dipping of the transducers for a sonar reading, tearing occurred in the previous cables, resulting in the loss of transducers.

DEVELOPMENT STATUS/MAJOR DEVELOPMENT MILESTONES:

FINANCIAL PLAN: (TOA, \$ in Millions)

	Prior Years		FY 2003		FY 2004		FY 2005		FY 2006		FY 2007		FY 2008		FY2009		To Complete		Total		
	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	
RDT&E																					
PROCUREMENT																					
Installation Kits	172	5.9																	172	5.9	
Install Kits N/R		*																			*
Installation Equipment N/R		5.7																			5.7
Engineering Change Orders		*																			*
Data																					
Training Equipment																					
Support Equipment																					
ILS		0.2																			0.2
Other Support		1.2																			1.2
Interim Contractor Support																					
Installation Cost																					
<b>Total Procurement</b>	<b>172</b>	<b>13.0</b>																		<b>172</b>	<b>13.0</b>

Notes:

1. Totals may not add due to rounding
2. Asterisk indicates amount less than \$50K
3. Installation will be accomplished as an "O" Level Install

Exhibit P-3a

Individual Modification

MODIFICATION TITLE: H-60 Ultra Low Maintenance Battery (OSIP 06-01)

MODELS OF SYSTEMS AFFECTED: SH-60B, HH-60H, SH-60F TYPE MODIFICATION: Operational Enhancement/ Safety

DESCRIPTION/JUSTIFICATION: Initiative replaces the current battery for the H-60 weapons system with ULM Battery. The ULM Battery reduces the cost of ownership, by reducing maintenance requirement, reduces weigh and reduces the risk of hazmat discharge. This equipment will be provided for the current inventory of 40 HH-60H, 160 SH-60B and 74 SH-60F aircraft. Inventory includes 1 HH-60H currently being rebuilt at Troy, AL, 2 additional SH-60Bs designated NSH-60B, and 1 additional SH-60F designated YSH-60F. Installations will be accomplished at "O" level.

DEVELOPMENT STATUS/MAJOR DEVELOPMENT MILESTONES: The ULM Battery is currently being used by the Coast Guard H-60 aircraft. This would provide the H-60 community with a common use item.

FINANCIAL PLAN: (TOA, \$ in Millions)

	Prior Years		FY 2003		FY 2004		FY 2005		FY 2006		FY 2007		FY 2008		FY2009		To Complete		Total		
	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	
RDT&E																					
PROCUREMENT																					
Installation Kits																					
Retrofit Kits	274	0.8																		274	0.8
Installation Kits N/R**	1	1.4																		1	1.4
Installation Equipment																					
ULM Battery	270	0.3																		270	0.3
Installation Equipment N/R																					
Engineering Change Orders																					
Data																					
Training Equipment																					
Support Equipment																					
ILS																					
Other Support		0.1																			0.1
Interim Contractor Support																					
Installation Cost																					
<b>Total Procurement</b>	<b>275</b>	<b>2.6</b>																		<b>275</b>	<b>2.6</b>

Notes:

1. Totals may not add due to rounding
2. Asterisk indicates amount less than \$50K
3. \*\*One ULM A-kit procured as a test asset will be installed into an active aircraft.
4. Installation will be accomplished at "O" Level

MODIFICATION TITLE: Advance Helicopter Emergency Egress Lighting System ADHEELS (OSIP17-02)

MODELS OF SYSTEMS AFFECTED: SH-60B, SH-60F, HH-60H TYPE MODIFICATION Operational Enhancement/ Safety

DESCRIPTION/JUSTIFICATION: The ADHEELS 2000/f1 is a self-contained, automatically activated, emergency exit/escape light system. Some of the more impressive characteristics of the system include both automatic and manual activation, automatically activated by water immersion, G-sensitive switch, pitch/roll>110 degrees activation, system weight is <10lb per aircraft vs. 27lb for AFC-46 heels, five (5) year maintenance cycle (battery package replacement). Current retrofit plan reflects: (13) SH-60B, (75) SH-60F, and (39) HH-60H.

DEVELOPMENT STATUS/MAJOR DEVELOPMENT MILESTONES:

FINANCIAL PLAN: (TOA, \$ in Millions)

	Prior Years		FY 2003		FY 2004		FY 2005		FY 2006		FY 2007		FY 2008		FY2009		To Complete		Total		
	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	
RDT&E																					
PROCUREMENT																					
Installation Kits	127	1.0																		127	1.0
Retrofit Kits																					
Installation Kits N/R		0.1																			0.1
Installation Equipment																					
Installation Equipment N/R																					
Engineering Change Orders																					
Data		0.2																			0.2
Training Equipment																					
Support Equipment																					
ILS																					
Other Support		0.1																			0.1
Interim Contractor Support																					
Installation Cost	**	0.6	20		107															127	0.6
<b>Total Procurement</b>		<b>2.0</b>																			<b>2.0</b>

Notes:

1. Totals may not add due to rounding
  2. Asterisk indicates amount less than \$50K
- \*\* FY02 Congressional Add funding provided for kit procurements and installation.

**Exhibit P-3a**

MODELS OF SYSTEMS AFFECTED: SH-60B, SH-60F, HH-60H MODIFICATION TITLE: Advance Helicopter Emergency Egress Lighting System (OSIP 17-02)

INSTALLATION INFORMATION:

METHOD OF IMPLEMENTATION: Contractor Field Mod Team

ADMINISTRATIVE LEAD-TIME: 2 Months PRODUCTION LEAD-TIME: 3 Months

CONTRACT DATES: FY 2003: \_\_\_\_\_ FY 2004: \_\_\_\_\_ FY 2005: \_\_\_\_\_

DELIVERY DATE: FY 2003: \_\_\_\_\_ FY 2004: \_\_\_\_\_ FY 2005: \_\_\_\_\_

(\$ in Millions)

Cost:	Prior Years		FY 2003		FY 2004		FY 2005		FY 2006		FY 2007		FY 2008		FY 2009		To Complete		TOTAL		
	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	
FY 2002 & PY ( 127) kits	**	0.6	20		107															127	0.6
FY 2003 ( ) kits																					
FY 2004 ( ) kits																					
FY 2005 ( ) kits																					
FY 2006 ( ) kits																					
FY 2007 ( ) kits																					
FY 2008 ( ) kits																					
FY 2009 ( ) kits																					
To Complete ( ) kits																					
<b>TOTAL</b>	<b>0</b>	<b>0.6</b>	<b>20</b>		<b>107</b>															<b>127</b>	<b>0.6</b>

Installation Schedule

\*\* FY02 Congressional Add funding provided for kit procurements and installation.

	FY 2002 & Prior	FY 2003				FY 2004				FY 2005				FY 2006							
		1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4				
In					20	54	53														
Out					20	54	53														

	FY 2007				FY 2008				FY 2009				To Complete	TOTAL
	1	2	3	4	1	2	3	4	1	2	3	4		
In														127
Out														127

MODIFICATION TITLE: Gearbox Corrosion (OSIP 08-03)

MODELS OF SYSTEMS AFFECTED: SH-60B, SH-60F, HH-60H TYPE MODIFICATION: Operational Enhancement

DESCRIPTION/JUSTIFICATION: Currently, the Main Gear Box is NRE developing sensor (a flight critical area) to check for corrosion once a year during a 365 day inspection. Approximately 3 out of 10 Main Gear Boxes are found to have excessive corrosion and need to be replaced. A monitoring sensor placed on the Main Gear Box forward bridge assembly would provide an early warning system when corrosion starts to become excessive. In reaction to this warning, additional preventative measures could be taken resulting in substantially less money and man-hours being spent repairing/replacing the Main Gear Box.

DEVELOPMENT STATUS/MAJOR DEVELOPMENT MILESTONES: Sensor Lab Testing was completed October 2002, Sensor Field Validation commenced September 2003, Sensor Acquisition March 2004, Sensor Installation August 2004 and Squadron Training October 2004.

FINANCIAL PLAN: (TOA, \$ in Millions)

	Prior Years		FY 2003		FY 2004		FY 2005		FY 2006		FY 2007		FY 2008		FY2009		To Complete		Total		
	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	
RDT&E																					
PROCUREMENT																					
Installation Kits																					
Installation Kits N/R				0.1		2.4															2.5
Installation Equipment																					
Installation Equipment N/R																					
Engineering Change Orders																					
Data																					
Training Equipment																					
Support Equipment																					
ILS																					
Other Support																					
Interim Contractor Support																					
Installation Cost																					
<b>Total Procurement</b>				<b>0.1</b>		<b>2.4</b>															<b>2.5</b>

Notes:

1. Totals may not add due to rounding
2. Asterisk indicates amount less than \$50K

MODIFICATION TITLE: H-60 Safety Related Systems Upgrade (OSIP 09-03)

MODELS OF SYSTEMS AFFECTED: SH-60B, SH-60F, HH-60H TYPE MODIFICATION: Operational Enhancement

DESCRIPTION/JUSTIFICATION: Gunners Belts are H-60 Series Systems Safety Working Group (SSWG) number 1 item of concern. Procure 1 per aircraft for 160 SH-60B, and 3 per 74 SH-60Fs, 40 HH-60Hs, and 39 MH-60Ss. Gunner's Belt (Web Retractors) are used by crewmen when they are out of seats, i.e., as during unprepared landing in a Landing Zone (LZ) during VERTREP operations. T700 Engine Safety Improvements (White Harness) funds ECPs to provide encapsulated (waterproof) engine wire harness. In addition troubleshoot T700 Engine problems unique to H-60 community and find fixes. Support proposed Joint ECP to provide an Engine High Speed Shaft Flex Coupling Replacement, a proven Lead The Fleet (LTF) concept that would remove the potential for catastrophic engine failures, by increasing margin of safety and readiness while reducing inspection and maintenance tasks. Stabilator Control System Redesign solves problem of uncommanded runaway without caution alerts. H-60 Lighted RAST Probe provides a luminescent messenger cable.

MODELS OF SYSTEMS AFFECTED: MH-60R, MH-60S TYPE MODIFICATION: Operational Enhancement

DESCRIPTION/JUSTIFICATION: Cockpit Voice Recorder and Flight Data Recorder is to provide crash data to assist accident investigation personnel in gathering data to determine the cause of the accident. The Ground Proximity Warning System (GPWS) will be a software-based system that takes existing aircraft data and calculates a recovery profile to the above ground attitude of the aircraft. If the recovery profile (plus a suitable buffer) intercepts this ground height, GPWS will generate a warning to the pilot. Other means of generating a warning may also be used to ensure maximum detection with minimum nuisance cues. The retrofit plan for systems to be modified is as follows: MH-60S 74; MH-60R 36

DEVELOPMENT STATUS/MAJOR DEVELOPMENT MILESTONES: Off the shelf items (minor mod required), off the shelf components for a 1-level fixed contract lead time is 6 months and production is 3 months to deliver all parts required. Joint Engineering Change Proposal with Army testing completed May 20, 2001.

METHOD OF IMPLEMENTATION: The Gunner Belts, White Harness, High Speed Shaft, Lighted Rast Probe, Cockpit Voice Recorder and Flight Data Recorders are "O" Level Installs.

FINANCIAL PLAN: (TOA, \$ in Millions)

	Prior Years		FY 2003		FY 2004		FY 2005		FY 2006		FY 2007		FY 2008		FY2009		To Complete		Total		
	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	
RDT&E																					
PROCUREMENT																					
Installation Kits (SH-60B/SH-60F/HH-60H)																					
SH-60B Gunners Belt Kits			160	0.3																	
SH-60F Gunners Belt Kits			222	0.4																	
HH-60H Gunners Belt Kits			120	0.2																	
MH-60S Gunners Belt Kits			116	0.2																	
White Harness (ALL TMS)			548	0.2																	
H-60 High Speed Shaft (ALL TMS)			322	4.0	191	2.1	166	2.0													
H-60 Lighted RAST Probe (SH-60B/SH-60F/HH-60H)			202	0.1																	
New White Harness (ALL TMS)					140	0.7															
Installation Kits (MH-60S, MH-60R)																					
MH-60S CVR/FDR							37	1.3													
MH-60R CVR/FDR							20	0.8													
Installation Kits N/R (MH-60S/MH-60R)				0.2																	
Installation Kits N/R (SH-60B/SH-60F/HH-60H)				0.9																	
Installation Kits N/R (H-60) Hellfire Sea Target						1.0															
Installation Equipment N/R (MH-60S/MH-60R)						3.2															
Installation Equipment N/R (SH-60B/SH-60F/HH-6H)				1.0		2.9															
Installation Equipment (MH-60S/MH-60R)																					
MH-60R/S Gunners Belts			104	0.3																	
MH-60S GPWS					37	0.3	30	0.8													
MH-60R GPWS					12	0.1	12	0.1													
Installation Equipment (SH-60B/SH-60F/HH-6H)																					
SH-60B/SH-60F/HH-6H Gunners Belts			78	0.2																	
Engineering Change Orders						0.1															
Data				1.0		0.1		0.3													
Training Equipment				0.1		0.1		0.2													
Support Equipment																					
ILS				0.2		0.2		0.4													
Other Support				0.6		0.2		0.3													
Interim Contractor Support																					
Installation Cost					49	2.1	42	1.0													
<b>Total Procurement</b>			<b>1872</b>	<b>10.0</b>	<b>380</b>	<b>13.1</b>	<b>265</b>	<b>7.2</b>													

Notes:

1. Totals may not add due to rounding
2. Asterisk indicates amount less than \$50K
3. Gunner Belts, White Harness, New White Harness, High Speed Shaft, Lighted RAST Probe, Cockpit Voice Recorder and Flight Data Recorders are "O" Level Installs.
4. H-60 Lighted RAST Probe will be procured for 160 SH-60Bs, 21 SH-60Fs and 21 HH-60Hs.
5. New White Harness will be procured for 50 SH-60Bs, 51 SH-60Fs, and 39 HH-60Hs.

Exhibit P-3a

MODELS OF SYSTEMS AFFECTED: MH-60S GPWS MODIFICATION TITLE: H-60 Safety Related Systems Upgrade (OSIP 09-03)

INSTALLATION INFORMATION:

METHOD OF IMPLEMENTATION: Contractor Field Mod Team

ADMINISTRATIVE LEAD-TIME: 4 Months PRODUCTION LEAD-TIME 6 Months

CONTRACT DATES: FY 2003: \_\_\_\_\_ FY 2004: Jan-04 FY 2005: Jan-05 FY 2006: Jan-06

DELIVERY DATE: FY 2003: \_\_\_\_\_ FY 2004: Jul-04 FY 2005: Jul-05 FY 2006: Jul-06

(\$ in Millions)

Cost:	Prior Years		FY 2003		FY 2004		FY 2005		FY 2006		FY 2007		FY 2008		FY 2009		To Complete		TOTAL		
	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	
FY 2002 & PY ( ) kits																					
FY 2003 ( ) kits																					
FY 2004 (37) kits					37	1.5														37	1.5
FY 2005 (30) kits								30	0.6											30	0.6
FY 2006 (7) kits										7	0.2									7	0.2
FY 2007 ( ) kits																					
FY 2008 ( ) kits																					
FY 2009 ( ) kits																					
To Complete (0) kits																					
<b>TOTAL</b>					<b>37</b>	<b>1.5</b>		<b>30</b>	<b>0.6</b>	<b>7</b>	<b>0.2</b>								<b>74</b>	<b>2.3</b>	

Installation Schedule

	FY 2002 & Prior	FY 2003				FY 2004				FY 2005				FY 2006							
		1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4				
In									37				30								
Out								37				30									

	FY 2007				FY 2008				FY 2009				To Complete	TOTAL
	1	2	3	4	1	2	3	4	1	2	3	4		
In														
Out														

Exhibit P-3a

MODELS OF SYSTEMS AFFECTED: MH-60R GPWS MODIFICATION TITLE: H-60 Safety Related Systems Upgrade (OSIP 09-03)

INSTALLATION INFORMATION:

METHOD OF IMPLEMENTATION: Contractor Field Mod Team

ADMINISTRATIVE LEAD-TIME: 4 Months PRODUCTION LEAD-TIME 6 Months

CONTRACT DATES: FY 2003: \_\_\_\_\_ FY 2004: Jan-04 FY 2005: Jan-05 FY 2006: Jan-06

DELIVERY DATE: FY 2003: \_\_\_\_\_ FY 2004: Jul-04 FY 2005: Jul-05 FY 2006: Jul-06

(\$ in Millions)

Cost:	Prior Years		FY 2003		FY 2004		FY 2005		FY 2006		FY 2007		FY 2008		FY 2009		To Complete		TOTAL		
	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	
FY 2002 & PY ( ) kits																					
FY 2003 ( ) kits																					
FY 2004 (12) kits					12	0.6															
FY 2005 (12) kits							12	0.4													
FY 2006 (12) kits																					
FY 2007 ( ) kits																					
FY 2008 ( ) kits																					
FY 2009 ( ) kits																					
To Complete ( ) kits																					
<b>TOTAL</b>					<b>12</b>	<b>0.6</b>	<b>12</b>	<b>0.4</b>													

Installation Schedule

	FY 2002 & Prior	FY 2003				FY 2004				FY 2005				FY 2006							
		1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4				
In									12				12								
Out									12				12								

	FY 2007				FY 2008				FY 2009				To Complete	TOTAL
	1	2	3	4	1	2	3	4	1	2	3	4		
In														
Out														

Exhibit P-3a

Individual Modification

MODIFICATION TITLE: AMCM/Armed Helo (Correction of Deficiencies) (OSIP 16-04)

MODELS OF SYSTEMS AFFECTED: MH-60S

TYPE MODIFICATION: Operational Enhancement

DESCRIPTION/JUSTIFICATION: Based on Developmental and Operational testing, Fleet aircraft require modifications to correct identified deficiencies incorporated in production aircraft. These modifications include corrections to Common Cockpit Avionics, Auxiliary Fuel System, High Maintenance Battery, Search and Rescue Equipment, Exterior Lighting, Rotor System and Airframe and Night Vision Display. Current retrofit plan is as follows: 65 MH-60S. The Aux Tank A kit will be retrofit on 50 aircraft. The Bifilar B Kit will be retrofit as an "O" Level install on 51 aircraft. These capabilities will be incorporated as forward fit in all subsequent aircraft during production.

DEVELOPMENT STATUS/MAJOR DEVELOPMENT MILESTONES: The MH-60S aircraft completed OPEVAL in Mar 2002; MS III was completed 12 Aug 2002. The validation of the Aux Tank A will be complete in the second quarter of FY 2005.

FINANCIAL PLAN: (TOA, \$ in Millions)

	Prior Years		FY 2003		FY 2004		FY 2005		FY 2006		FY 2007		FY 2008		FY2009		To Complete		Total		
	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	
RDT&E																					
PROCUREMENT																					
Installation Kits																					
ECP 4000 Retrofit					5	0.5	24	2.0													
Bifilar					10	0.5	41	1.9													
NVD KIT							7	0.2													
Retrofit Kits																					
Installation Kits N/R						2.6															
Installation Equipment																					
Installation Equipment N/R																					
Engineering Change Orders																					
Data																					
Training Equipment																					
Support Equipment																					
ILS																					
Other Support						0.2		0.1													
Interim Contractor Support																					
Installation Cost								12	0.4												
<b>Total Procurement</b>						<b>3.8</b>		<b>4.5</b>													

Notes:

1. Totals may not add due to rounding
2. Asterisk indicates amount less than \$50K





Exhibit P-40, BUDGET ITEM JUSTIFICATION										DATE: February 2004	
APPROPRIATION/BUDGET ACTIVITY Aircraft Procurement, Navy/APN-5 Aircraft Modifications					P-1 ITEM NOMENCLATURE H-1 Series Modifications						
Program Element for Code B Items:											
	Prior Years	ID Code	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	To Complete	Total
QTY		A									
COST (In Millions)	99.9	A	9.1	10.9	3.5	7.4	7.4	6.0	7.6	27.5	179.3
<p>There are 89 H-1N's in the UH configuration (68 active/20 reserve/1 test) and 28 H-1Ns in the HH configuration (9 Marine/19 Navy) for a total of 117. The UH-1N provides command and control and combat assault support under day/night and adverse weather conditions. Additional UH-1N missions include special operations support, controls/coordination/guidance of supporting fire and aeromedical evacuation. The overall goal of the modifications budgeted in FY2005 is to eliminate safety hazards, remedy obsolescence and maintain significant mission capability until the planned retirement date. The HH configured aircraft provide local civilian and military search and rescue support, as well as augmenting Department of Homeland Security resources.</p>											
<u>OSIP No.</u>	<u>Description</u>	<u>Prior Years</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>	<u>FY 2008</u>	<u>FY 2009</u>	<u>To Complete</u>	<u>Total</u>
31-92	UH-1 NTIS	78.4	5.0	8.2	3.3	7.2	7.2	5.8	7.4	27.5	149.9
18-98	H-1N Safety Upgrades	21.5	4.1	2.7	0.2	0.2	0.2	0.2	0.2		29.4
	Total	99.9	9.1	10.9	3.5	7.4	7.4	6.0	7.6	27.5	179.3
<b>RESERVE FUNDING INCLUDED IN TOTAL</b>		5.2									
<p>Asterisk indicates amounts less than \$50K                      Totals may not add due to rounding</p>											

Exhibit P-3a Individual Modification

MODIFICATION TITLE: UH-1N NAVIGATIONAL THERMAL IMAGING SYSTM (NTIS) (OSIP 31-92)

MODELS OF SYSTEMS AFFECTED: 89 UH-1Ns, 7 reclamation a/c, 4 trainers, 4 lab units TYPE MODIFICATION: SAFETY

DESCRIPTION/JUSTIFICATION: Operational Requirements Document (ORD) AAS-51 states that the UH-1N requires a Navigational Thermal Imaging System (NTIS) to provide the U.S. Marine Corps with a night/day warfighting capability in the NOE/smoke/dust/haze environment. This capability reduces the safety risk by allowing the aircrew to see and avoid flight obstructions and locate targets that might not be visible with the naked eye or night vision goggles. The AN/AAQ-22 is a low cost, stabilized system which provides the required capability in the form of high quality real time imagery displayed into the UH-1N aircraft cockpit. The NTIS System is comprised of 5 components; Turret FLIR Unit (TFU), Central Electronics Unit (CEU), Hand Control Unit (HCU), Thermal Image Recorder (TIR), and the Video Display Unit (VDU). The NTIS is installed only in the UH-1N aircraft by AFC 278. The system also includes a Laser Range Finder (LRF) to determine the range to landmarks, targets, and tactical points of interest. Beginning FY97, the NTIS was upgraded from 1st generation to 3rd generation Forward Looking Infrared (FLIR) technology. The COTS Star SAFIRE modification consisted of a 3-5 micron focal plane array detector, an eye safe LRF and new optics. Additionally, the NTIS will be upgraded with a new Thermal Image Recorder (TIR) with mount and a Flat Panel Display replacement for the VDU due to a fire hazard. Additional modifications to the NTIS are being incorporated in order to add a COTS Laser Designator/Laser Pointer capability (BRITE Star). Laser designator capability is a threshold ORD requirement. The Laser Pointer capability is an ORD objective requirement. A contract has been signed to provide a minimum of 1 and a maximum of 125 upgrades to the AN/AAQ-22 series systems.

DEVELOPMENT STATUS/MAJOR DEVELOPMENT MILESTONES: The NTIS is a commercial off-the-shelf (COTS) item. MIL-STD-810C testing is complete. DT-III testing was completed in the fourth quarter 1994 and FOT&E was completed in the second quarter FY 1996. Additional testing occurred during fourth quarter 1998 for the NTIS upgrade. The completion of COTS post Milestone III testing of Laser Designator (BRITE Star) occurred in 3rd and 4th quarter of FY01 and has continued into FY02.

FINANCIAL PLAN: (TOA, \$ in Millions)

	Prior Years		FY 2003		FY 2004		FY 2005		FY 2006		FY 2007		FY 2008		FY 2009		To Complete		Total		
	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	
RDT&E																					
PROCUREMENT																					
Installation Kits																					
AFC 278 ECP E/JH HO 30006	105	2.6																			
AFC-334 TIR ECP#H-1-CP9-97R-1	105	0.1																			
AFC-364 (BRITE Star)			7	*	12	*	5	*													
Installation Kits N/R		3.4																			
Installation Equipment																					
NTIS System (GFE)	84	29.7																			
TIR (GFE)	107	1.0																			
NTIS Upgrade	81	27.9	4	1.4																	
Flat Panel Display	90	0.8																			
BRITE STAR	3	2.0	5	3.3	12	7.6	5	2.9													
Installation Equipment N/R		0.6																			
Engineering Change Orders																					
Data		0.5																			
Training Equipment	2	0.6																			
Support Equipment		1.1					2	*													
ILS		0.3		0.1		0.1		0.1													
Other Support		4.8		0.2		0.5		0.3													
Interim Contractor Support																					
Installation Cost	107	3.1	7	*	12	*	5	*													
<b>Total Procurement</b>		<b>78.4</b>		<b>5.0</b>		<b>8.2</b>		<b>3.3</b>													

Notes:

1. Totals may not add due to rounding
2. Asterisk indicates amount less than \$50K
3. FY04 NTIS Upgrade Procurement realigned to BRITE Star to continue FY03 BRITE Star Congressional Add.

Exhibit P-3a

MODELS OF SYSTEMS AFFECTED: UH-1N

MODIFICATION TITLE: UH-1N NAVIGATION THERMAL IMAGING SYSTEM (NTIS/BRITE STAR) (OSIP 31-92)

INSTALLATION INFORMATION:

METHOD OF IMPLEMENTATION: INSTALLED AT INTER-SERVICE SDLM AND BY CONTRACTOR FIELD MOD TEM

ADMINISTRATIVE LEADTIME: 3 Months PRODUCTION LEADTIME: 5 Months

CONTRACT DATES: FY 2003: Dec-02 FY 2004: Dec-03 FY 2005: Dec-04

DELIVERY DATE: FY 2003: May-03 FY 2004: May-04 FY 2005: May-05

(\$ in Millions)

Cost:	Prior Years		FY 2003		FY 2004		FY 2005		FY 2006		FY 2007		FY 2008		FY 2009		To Complete		TOTAL		
	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	
FY 2002 & PY (107 ) kits	107	3.1																			
FY 2003 (7) kits			7	*																	
FY 2004 (12) kits					12	*															
FY 2005 (5 ) kits							5	*													
FY 2006 ( 11) kits																					
FY 2007 (11) kits																					
FY 2008 (9) kits																					
FY 2009 (11) kits																					
To Complete (37) kits																					
TOTAL	107	3.1	7	*	12	*	5	*													

Installation Schedule

	FY 2002 & Prior	FY 2003				FY 2004				FY 2005				FY 2006							
		1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4				
In	107			5	2			5	7			2	3								
Out	107			5	2			5	7			2	3								

	FY 2007				FY 2008				FY 2009				To Complete	TOTAL	
	1	2	3	4	1	2	3	4	1	2	3	4			
In															
Out															

Exhibit P-3a Individual Modification

MODIFICATION TITLE: H-1N SAFETY UPGRADES (18-98)

MODELS OF SYSTEMS AFFECTED: HH-1N/UH-1N TYPE MODIFICATION: SAFETY

DESCRIPTION/JUSTIFICATION: Operational Requirements Document (ORD) AAS-51 requires that the following safety shortfalls be corrected. The HH/UH-1N helicopter fleet was designed in the 1960s, introduced in the 1970s and are projected to remain in the Department of Navy inventory until FY-2020. This program is designed to address safety issues, such as mishap casual factors associated with maintaining an older type model series aircraft. This safety upgrade program replaced the Tail Drive System (TDS). A COTS/NDI Improved Torque Indicator System will be added to provide a digital torque display to the aircrew to improve low power margin situational awareness. Tailboom Strake technology will be investigated to improve performance and reduce tailboom fatigue. Tailboom Strakes have been proven to increase aircraft and aircrew safety by reducing tailboom fatigue and pilot workload while improving tail rotor authority and single engine performance. Additionally, the overspeed Aural Alert Unit (AAU) will be modified. A modification to the CH-8500 Vibration Analysis Support Equipment (VASE) will also be needed. A COTS replacement Rotor Brake Quill (RBQ) assembly, component failures due to an obsolete design pose a significant risk to all aircrew, and Low Maintenance Battery (LMB) will be incorporated into all HH/UH-1N aircraft. Included in this OSIP is the requirement to correct the safety deficiencies of the Defensive Armament System (DAS): machine guns, carriages, mounts, and associated equipment. Improvements and enhancements to airframe Night Vision Goggle (NVG) compatibility along with communications equipment for external agency interaction during the Global War on Terrorism. A/C fatigue life issues and mitigating technology will be investigated to improve performance and mitigate aircraft fatigue. Incorporation of Crash Attenuating Seat Cushions, to reduce reduce the likelihood of back injuries to pilots during hard landings or crashes, will be also investigated for modification.

DEVELOPMENT STATUS/MAJOR DEVELOPMENT MILESTONES: These upgrades are proprietary, non-developmental items used in other BHTI produced military and FAA certified commercial helicopters.

FINANCIAL PLAN: (TOA, \$ in Millions)

	Prior Years		FY 2003		FY 2004		FY 2005		FY 2006		FY 2007		FY 2008		FY 2009		To Complete		Total		
	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	
RDT&E																					
PROCUREMENT																					
Installation Kits																					
ECP # BHTI-1710 (TDS)	131	6.3																			
ECP# HI-CP-24-99 Rotor Brake Quill	136	1.6																			
ECP# HI-CP-19-98 Aural Alert Unit	103	Note #3																			
Smart Torque Indicator	68	1.0			200	2.3															
ECP# NAWCWD 97GG023R2 M240	210	0.1																			
ECP# 98-002 GAU-17 Gun Ctrl Unit	79	0.3																			
ECP#98-0014 IDAS Mounts	110	0.7																			
Tailboom Strakes			119	4.0																	
Installation Kits N/R		1.3																			
Aural Alert Unit Install. Equipment	103	0.6																			
Engineering Change Orders		0.0																			
Data		0.7																			
Training Equipment	4	1.3																			
Support Equipment	100	0.4																			
ILS		1.0																			
Other Support		5.4		0.1		0.4		0.2													
Interim Contractor Support																					
Installation Cost	229	0.8																			
<b>Total Procurement</b>		<b>21.5</b>		<b>4.1</b>		<b>2.7</b>		<b>0.2</b>													

- Notes:
1. Totals may not add due to rounding
  2. Asterisk indicates amount less than \$50K
  3. Aural Alert Unit Installation Kit Cost included in Aural Alert Unit Installation Equipment cost.

**Exhibit P-3a**

MODELS OF SYSTEMS AFFECTED: HH-1N/UH-1N MODIFICATION TITLE: H-1N SAFETY UPGRADES (OSIP 18-98)

INSTALLATION INFORMATION:

METHOD OF IMPLEMENTATION: CONTRACTOR FIELD TEAM AND ORGANIC MOD TEAM

ADMINISTRATIVE LEADTIME: 2 Months PRODUCTION LEADTIME: 6 Months

CONTRACT DATES: FY 2003: \_\_\_\_\_ FY 2004: \_\_\_\_\_ FY 2005: \_\_\_\_\_

DELIVERY DATE: FY 2003: \_\_\_\_\_ FY 2004: \_\_\_\_\_ FY 2005: \_\_\_\_\_

(\$ in Millions)

Cost:	Prior Years		FY 2003		FY 2004		FY 2005		FY 2006		FY 2007		FY 2008		FY 2009		To Complete		TOTAL	
	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$
FY 2002 & PY (229) kits	229	0.8																	229	0.8
FY 2003 ( ) kits																				
FY 2004 ( ) kits																				
FY 2005 ( ) kits																				
FY 2006 ( ) kits																				
FY 2007 ( ) kits																				
FY 2008 ( ) kits																				
FY 2009 ( ) kits																				
<b>TOTAL</b>	<b>229</b>	<b>0.8</b>																	<b>229</b>	<b>0.8</b>

Installation Schedule reflects 103 AAUs and 126 TDS.

FY 2002 & Prior	FY 2002				FY 2003				FY 2004				FY 2005				FY 2006			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
In	213	16																		
Out	213	16																		

	FY 2007				FY 2008				FY 2009				To Complete	TOTAL
	1	2	3	4	1	2	3	4	1	2	3	4		
In														229
Out														229

BUDGET ITEM JUSTIFICATION SHEET P-40				DATE: February 2004							
APPROPRIATION/BUDGET ACTIVITY Aircraft Procurement, Navy/APN-5 Aircraft Modifications			P-1 ITEM NOMENCLATURE EP-3 Series Modifications								
Program Element for Code B Items:			Other Related Program Elements								
	Prior Years	ID Code	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	To Complete	Total
QUANTITY											
COST (In Millions)	342.2		57.6	55.392*	28.3	55.6	62.4	29.1	30.2	10.4	671.2
<p>This line item funds modifications to the EP-3E aircraft. The EP-3E is a land based, long range aircraft, with electronic intercept devices for detection and tracking of enemy RADARs and radios. The overall goal of the modifications budgeted in FY2005 is to improve operational capability and aircrew productivity by expanding the ESM frequency coverage, applying state-of-the-art signal exploitation/processing/display techniques, expanding direction finding (DF) frequency coverage, and expanding special signal processing capability. OSIP 29-00 funds the conversion of nine P-3 aircraft into EP-3E aircraft that will be utilized as replacements or pipelines to mitigate the aging fleet.</p> <p>Research and Development is funded with National Security Agency (NSA) Defense Cryptologic Program (DCP) funds and ASDC4I Defense Airborne Reconnaissance Program (DARP). DCP R&amp;D funds the integration of Non-Developmental Items (NDI) under the Navy's Airborne Sensor System Improvement line. The NSA line for Navy Airborne Sensor System improvement funds sensor improvements with application to the EP-3E. DCP R&amp;D PE: 0305885G refers. DARP R&amp;D funds are responsible for the development and acquisition of EP-3E sensors, data links, data relays, and ground stations to achieve and maintain interoperability with Defense-wide airborne reconnaissance assets. Active PAA inventory is 12 with a BAA inventory of 4 for a total of 16 aircraft at the end of OSIP 29-00. Funds budgeted in FY2005 are to continue Joint Sigint Avionics Family (JSAF) Modification Program (JMOD). The EP-3E has an average service life of 29.5 years and the first EP-3E will reach end of service in 2004.</p>											
<u>OSIP No.</u>	<u>Description</u>	<u>Prior Years</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>	<u>FY 2008</u>	<u>FY 2009</u>	<u>To Complete</u>	<u>Total</u>
14-95	EP-3 Sensor Improvement	142.8									142.8
29-00	P-3C to EP-3E Conversion Program	160.0									160.0
	DERF (non-add)	75.0									
11-01	JASA Modification (JMOD)	39.3	57.6	55.4	28.3	55.6	62.4	29.1	30.2	10.4	368.3
	DERF (non-add)	15.0									
TOTAL		342.2	57.6	55.4	28.3	55.6	62.4	29.1	30.2	10.4	671.2
<p>FY-02 Defense Emergency Response Funds (DERF) in the amount of \$75.0 augments OSIP 29-00 and \$15.0 augments OSIP 11-01.                      FY-03 Defense Emergency Response Funds (DERF) in the amount of \$22.5 augments OSIP 11-01.                      *FY-05 Due to poor execution \$10 million of FY 02 funds were used to forward finance FY 05.</p>											
<p>Note: Totals may not add due to rounding.</p>											

Exhibit P-3a

## INDIVIDUAL MODIFICATION

MODIFICATION TITLE: EP-3 Sensor System Improvement (OSIP 14-95)MODELS OF SYSTEM AFFECTED: EP-3ETYPE MODIFICATION Operational Improvement / Modernization

## DESCRIPTION/JUSTIFICATION:

This Sensor System Improvement Program (SSIP) responds directly to Operational Requirement (OR) #057-095-87 and CAF-002-88. The program procures, integrates, and installs new capabilities into the EP-3 Electronic Warfare Support Measures (ESM) weapon system to cope with the increasingly complex and dense threat environment. The required improvements in productivity will be achieved by applying state-of-the-art signal exploitation/processing/display technique, and expanding Program signal processing capability. Tactical communications connectivity improvements include TRE Related Applications (TRAP), Tactical Digital Information Exchange System-B (TADIXS-B), Tactical Digital Information Link-A and -J (TADIL-A and -J), Tactical Information Broadcast Services (TIBS), Tactical Reconnaissance Information Exchange System (TRIXS), USN/USAF Advisory Support Network (ASN) Intelnet, DAMA-capable radios, and an upgrade to the OE-320 antenna suite. Integration and testing in the EP-3 Integrated Test Facility (ITF) prior to installation in the first production aircraft ensured integrated system functional integrity. The SSIP provides the hardware and software essential for timely situational analysis and reporting to the fleet tactical commands. The Congressional plus-up for LESPAs included NRE for qualifying LESPAs parachutes in both EP-3E and Special Project Aircraft. Procurement of parachutes was limited to the EP-3E requirement in this OSIP. Another Congressional plus-up for enhanced signal exploitation/processing is achieved by Low Probability of Intercept/Specific Emitter Identification (LPI/SEI).

This OSIP addresses 12 aircraft. Nine of the eleven EP-3E aircraft service lives end during FY2004 through FY2008.

In accordance with the approved Acquisition Strategy Review (ASR) dated 3 May 2001, program changes necessitated the replacement of JMOD MOD1 with Baseline Update. Baseline Update incorporates Joint Airborne Signals Intelligence (SIGINT) Architecture (JASA) compliant infrastructure with SSIP and Quick Response Capability (QRC) functional improvements into the Trial Kit Installation (TKI) aircraft.

## DEVELOPMENT STATUS/MAJOR DEVELOPMENT MILESTONES:

Initial testing at the Integrated Test Facility (ITF) was completed in the 2nd quarter of FY95. Based on this testing and an early operational assessment by COMOPTEVFOR, PEO(A) approved the production procurement of the first two system installs of SSIP Phase I. Production approval was based on follow-on qualification testing at the ITF and a COMOPTEVFOR operational assessment completed in the 2nd quarter FY96. DT was completed end of 3rd quarter FY00. OT was completed early 4th quarter FY00. The JMOD Baseline Update is required in order to ensure the JMOD TKI aircraft has the same baseline configuration and capabilities as SSIP and QRC fleet assets. Fleet introduction occurred 4th quarter FY00. The initial phase of the LPI/SEI contract was awarded 2nd quarter FY02, and the final portion was awarded 4th quarter.

Exhibit P-3a

MODIFICATION TITLE: EP-3 Sensor System Improvement (OSIP 14-95)

MODELS OF SYSTEM AFFECTED: EP-3E

TYPE MODIFICATION: Operational Improvement / Modernization

FINANCIAL PLAN (TOA, \$ in Millions):

	Prior Years		FY 2003		FY 2004		FY 2005		FY 2006		FY 2007		FY 2008		FY 2009		To Complete		TOTAL		
	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	
RDT&E																					
PROCUREMENT																					
Installation Kits																					
SSIP	12	5.4																		12	5.4
LESPA	12	1.1																		12	1.1
OE-320	12	.3																		12	.3
TADIL-J (Link-16)	12	1.2																		12	1.2
LPI/SEI	12	1.0																		12	1.0
Baseline Update	1	3.1																		1	3.1
Installation Kits N/R		10.3																			10.3
Installation Equipment																					
Storyteller	10	11.1																		10	11.1
Story Book	10	14.3																		10	14.3
Story Classic	10	11.7																		10	11.7
IP-1159 Replacement	10	5.0																		10	5.0
LESPA	12	1.0																		12	1.0
OE-320 Upgrade	12	1.8																		12	1.8
TADIL-J (Link-16)	12	4.0																		12	4.0
HBP Equipment		1.2																			1.2
LPI/SEI	12	8.7																		12	8.7
Baseline Update	1	6.7																		1	6.7
Installation Equipment N/R																					
Engineering Change Orders																					
Data		8.3																			8.3
Training Equipment		2.5																			2.5
Support Equipment		1.5																			1.5
ILS		7.8																			7.8
Testing		1.0																			1.0
Other Support		19.3																			19.3
Interim Contractor Support																					
Installation Cost	43	14.4																		43	14.4
<b>TOTAL PROCUREMENT</b>	<b>150</b>	<b>142.8</b>																		<b>150</b>	<b>142.8</b>

Notes:

1. Totals do not add due to rounding
2. Asterisk indicates amount less than 51K

Exhibit P-3a

MODELS OF SYSTEMS AFFECTED: EP-3E MODIFICATION TITLE: EP-3 Sensor System Improvement (OSIP 14-95)

INSTALLATION INFORMATION: LESPA/OE-320/TADIL-J(Link-16)/Baseline Update

METHOD OF IMPLEMENTATION: Commercial Contractor Depot Installation

ADMINISTRATIVE LEADTIME: 8 Months PRODUCTION LEADTIME: 6 Months

CONTRACT DATES: FY 2003:      FY 2004:      FY 2005:     

DELIVERY DATE: FY 2003:      FY 2004:      FY 2005:     

(\$ in Millions)

Cost:	Prior Years		FY 2003		FY 2004		FY 2005		FY 2006		FY 2007		FY 2008		FY 2009		To Complete		TOTAL		
	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	
FY 2002 & PY (37) kits	* 37	2.1																		37	2.1
FY 2003 () kits																					
FY 2004 () kits																					
FY 2005 () kits																					
FY 2006 () kits																					
FY 2007 () kits																					
FY 2008 () kits																					
FY 2009 () kits																					
To Complete () kits																					
<b>TOTAL</b>	<b>* 37</b>	<b>2.1</b>																		<b>37</b>	<b>2.1</b>

\* Includes 12 LESPA; 6 OE-320 "O" Level installs; 1 Baseline Update; 6 OE-320s and twelve (12) TADIL-J (Link-16) installations.

Installation Schedule

	FY 2002 & PRIOR	FY 2003				FY 2004				FY 2005				FY 2006				FY 2007				
		1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	
In	37																					
Out	37																					

	FY 2008				FY 2009				To Complete	TOTAL
	1	2	3	4	1	2	3	4		
In										37
Out										37

\* JMOD Baseline Update Installation

Exhibit P-3a

MODELS OF SYSTEMS AFFECTED: EP-3E MODIFICATION TITLE: EP-3 Sensor System Improvement (OSIP 14-95)

LPI/SEI (SP-160) (Congressional Add Project)

INSTALLATION INFORMATION:

METHOD OF IMPLEMENTATION: Commercial Contractor Installation

ADMINISTRATIVE LEADTIME: 8 Months PRODUCTION LEADTIME: 24 Months

CONTRACT DATES: FY 2003:      FY 2004:      FY 2005:     

DELIVERY DATE: FY 2003:      FY 2004:      FY 2005:     

(\$ in Millions)

Cost:	Prior Years		FY 2003		FY 2004		FY 2005		FY 2006		FY 2007		FY 2008		FY 2009		To Complete		TOTAL	
	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$
FY 2002 & PY (12) kits	12	1.2																	12	1.2
FY 2003 () kits																				
FY 2004 () kits																				
FY 2005 () kits																				
FY 2006 () kits																				
FY 2007 () kits																				
FY 2008 () kits																				
FY 2009 () kits																				
To Complete () kits																				
<b>TOTAL</b>	12	1.2																	12	1.2

Installation Schedule

	FY 2002 & PRIOR	FY 2003				FY 2004				FY 2005				FY 2006				FY 2007			
		1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
In	12																				
Out												2									

	FY 2008				FY 2009				To Complete	TOTAL
	1	2	3	4	1	2	3	4		
In										
Out										

Exhibit P-3a

MODELS OF SYSTEMS AFFECTED: EP-3E MODIFICATION TITLE: EP-3 Sensor System Improvement (OSIP 14-95)  
SSIP

INSTALLATION INFORMATION:

METHOD OF IMPLEMENTATION: Commercial Contractor Installation

ADMINISTRATIVE LEADTIME: \_\_\_\_\_ Months PRODUCTION LEADTIME: \_\_\_\_\_ Months

CONTRACT DATES: FY 2003: \_\_\_\_\_ FY 2004: \_\_\_\_\_ FY 2005: \_\_\_\_\_

DELIVERY DATE: FY 2003: \_\_\_\_\_ FY 2004: \_\_\_\_\_ FY 2005: \_\_\_\_\_

(\$ in Millions)

Cost:	Prior Years		FY 2003		FY 2004		FY 2005		FY 2006		FY 2007		FY 2008		FY 2009		To Complete		TOTAL		
	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	
FY 2002 & PY (12) kits	12	11.0																		12	11.0
FY 2003 () kits																					
FY 2004 () kits																					
FY 2005 () kits																					
FY 2006 () kits																					
FY 2007 () kits																					
FY 2008 () kits																					
FY 2009 () kits																					
To Complete () kits																					
<b>TOTAL</b>	<b>12</b>	<b>11.0</b>																		<b>12</b>	<b>11.0</b>

Installation Schedule

	FY 2002 & PRIOR	FY 2003				FY 2004				FY 2005				FY 2006				FY 2007			
		1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
In	11																				
Out	9	1	1																		

	FY 2008				FY 2009				To Complete	TOTAL
	1	2	3	4	1	2	3	4		
In										11
Out										11

NOTE: Eleven (11) installations reflect reduction due to Crete mishap.

Exhibit P-3a	INDIVIDUAL MODIFICATION	
MODIFICATION TITLE P-3C to EP-3E Conversion Program (OSIP 29-00)		
MODELS OF SYSTEM AFFECTED: EP-3E	TYPE MODIFICATION:	Operational Improvement / Modernization
DESCRIPTION/JUSTIFICATION:		
<p>The P-3C to EP-3E Conversion Program, designated as a No ACAT program, converts five P-3C aircraft to EP-3E aircraft. This OSIP responds to primary and backup EP-3E inventory requirements in VQ-1/2 Required Operational Capabilities Projected Operational Environment (ROC/POE) dated 9 Feb 2000, OPNAVINST 5442.8, and CNO letter Ser N880G10/OU661331 dated 30 May 00. Primary Aircraft Authorization (PAA) of 12 aircraft are required to perform operational missions. Backup Aircraft Authorization (BAA) of four aircraft (i.e., pipeline) are required to permit scheduled and unscheduled maintenance, modifications, inspections and repair without reduction of aircraft available for operational missions. The OSIP also addresses mission avionics requirements in Operational Requirement (OR) #057-095-87 and the CAPSTONE ORD (CAF-002-88). The first conversion replaces an EP-3E damaged in a 1997 mishap and struck from the PAA inventory. The second, third, fourth and fifth conversions are pipeline aircraft.</p> <p>This program was developed to maximize procurement efficiency by grouping the aircraft versus individual buys. Funding in FY00 covered NRE for the initial three aircraft. Funding in FY01 procures two aircraft while FY02 funding procures three aircraft and ARIES II/SSIP Obsolescence Risk Mitigation NRE. Four aircraft will be procured under the same contract in a configuration sufficient for induction into the JMOD program (OSIP 11-01), and the fifth aircraft will be configured as a JMOD aircraft. FY01 Intelligence Program Decision Memorandum (IPDM) moved funding for the second pipeline aircraft from FY03 to FY02.</p> <p>This OSIP includes \$60.0M in Defense Emergency Response Funding (DERF) for an additional conversion aircraft and \$15.0M for PR-32 avionics replacements/repairs. PR-32 avionics will be installed during the SSIP modification.</p>		
DEVELOPMENT STATUS/MAJOR DEVELOPMENT MILESTONES:		
<p>This program is a post-Milestone III, based on SSIP Milestone III dated 29 March 1996. The NRE contract was awarded in Feb 2001. The production contract for the replacement and first pipeline aircraft was awarded in September 01. The FY02 option for the second through fourth pipeline aircraft was exercised in the 2nd quarter FY02.</p>		

Exhibit P-3a		INDIVIDUAL MODIFICATION																		
MODIFICATION TITL:P-3C to EP-3E Conversion Program (OSIP 29-00)																				
MODELS OF SYSTEM AFFECTED: EP-3E										TYPE MODIFICATION: Operational Improvement / Modernization										
FINANCIAL PLAN (TOA, \$ in Millions):																				
	Prior Years		FY 2003		FY 2004		FY 2005		FY 2006		FY 2007		FY 2008		FY 2009		To Complete		TOTAL	
	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$
RDT&E																				
PROCUREMENT																				
Installation Kits																				
REPLACEMENT AIRCRAFT	1	11.0																	1	11.0
PIPELINE AIRCRAFT	3	35.7																	3	35.7
DERF AIRCRAFT	1	16.4																	1	16.4
CROSSDECK AIRCRAFT																				
Installation Kits N/R		15.8																		15.8
Installation Equipment																				
REPLACEMENT AIRCRAFT		**																		**
PIPELINE AIRCRAFT	3	34.3																	3	34.3
DERF AIRCRAFT	1	20.6																	1	20.6
DERF PR-32 AVIONICS	1	14.4																	1	14.4
CROSSDECK AIRCRAFT																				
Installation Equipment N/R		5.8																		5.8
Engineering Change Orders																				
Data		1.1																		1.1
Training Equipment																				
Support Equipment		.5																		.5
Testing		2.6																		2.6
ILS		2.0																		2.0
Other Support		4.0																		4.0
Interim Contractor Support																				
Installation Cost	5	71.1																	5	71.1
<b>TOTAL PROCUREMENT</b>	<b>10</b>	<b>235.0</b>																	<b>10</b>	<b>235.0</b>

Notes: \*\* Replacement aircraft B Kit to be crossdecked from crash-damaged aircraft

1. Totals do not add due to rounding NOTE: One (1) replacement and four (4) pipeline aircraft will be procured in a JMOD configuration.

2. Asterisk indicates amount less than 51K

Exhibit P-3a

MODELS OF SYSTEMS AFFECTED: EP-3E MODIFICATION TITLE: P-3C to EP-3E Conversion Program  
Replacement/Pipeline/DERF Aircraft

INSTALLATION INFORMATION:

METHOD OF IMPLEMENTATION: Commercial Contractor Installation

ADMINISTRATIVE LEADTIME: 8 Months PRODUCTION LEADTIME: Various Months  
 CROSSDECK AIRCRAFT: Various Months

CONTRACT DATES: FY 2003: \_\_\_\_\_ FY 2004: \_\_\_\_\_ FY200 \_\_\_\_\_

DELIVERY DATE: FY 2003: \_\_\_\_\_ FY 2004: \_\_\_\_\_ FY200 \_\_\_\_\_

(\$ in Millions)

Cost:	Prior years		FY 2003		FY 2004		FY 2005		FY 2006		FY 2007		FY 2008		FY 2009		To Complete		TOTAL		
	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	
FY 2002 & PY (5) kits	5	71.1																		5	71.1
FY 2003 () kits																					
FY 2004 () kits																					
FY 2005 () kits																					
FY 2006 () kits																					
FY 2007 () kits																					
FY 2008 () kits																					
FY 2009 () kits																					
To Complete () kits																					
TOTAL	5	71.1																		5	71.1

Installation Schedule

FY 2002 & Prior	FY 2003				FY 2004				FY 2005				FY 2006				FY 2007				
	1	2	3	4	1	2	3	4*	1**	2	3***	4****	1	2	3	4	1	2	3	4	
In	5																				
Out									1	2	1										

	FY 2008				FY 2009				To Complete	TOTAL
	1	2	3	4	1	2	3	4		
In										
Out										

\* Replacement aircraft (1)  
 \*\* Pipeline #1 aircraft (1)  
 \*\*\* Pipeline #2 aircraft (1)  
 \*\*\*\* Pipeline #3/DERF aircraft (2)

Exhibit P-3a	INDIVIDUAL MODIFICATION
MODIFICATION TITLE: EP-3E Joint Airborne SIGINT Architecture (JASA) Modification Program (JMOD) (OSIP 11-01)	
MODELS OF SYSTEM AFFECTED: EP-3E	TYPE MODIFICATION: Operational Improvement / Modernization
DESCRIPTION/JUSTIFICATION:	
<p>The EP-3E JASA Modification (JMOD) Program upgrades the capabilities of the Sensor System Improvement Program (SSIP) configuration of the EP-3E. This OSIP responds to Operational Requirement Document (ORD) #571-78-01 and the CAPSTONE ORD (CAF-002-88). JMOD is an evolutionary acquisition program consisting of three block mods. MOD 1 of this program updates the EP-3E infrastructure, improves auto-ESM with the Story Finder system, incorporates Joint Signal Processor (JSP), incorporates SSIP corrections, and incorporates Quick Response Capabilities (QRC) (including the SINGGAR upgrade and IR Strobes modifications) into JMOD. MOD 2 will incorporate a low band capability which improves special collection capability and adds the Common Data Link (CDL) allowing the EP-3E to serve as a network-centric airborne SIGINT collection element capable of sharing data with ground, air, and ship-based operators. MOD 3 incorporates precision targeting. Nine of the 16 EP-3E aircraft (BAA) will be managed through Special Structural Inspections (SSI-Ks) beyond JMOD Full Operational Capability (FOC).</p> <p>The Baseline Update to MOD 1 is required in order to ensure the JMOD TKI aircraft has the same baseline configuration and capabilities as SSIP and QRC fleet assets.</p> <p>This OSIP includes FY02 Congressional Plus-ups for Hyperwide/Deltawing and VME Tuners; and FY03 Congressional Plus-ups for Radio Frequency Distribution (RFD) Upgrades, JMOD 1 Upgrades and SIGINT Tuner. This OSIP includes \$15.0M in FY02 Defense Emergency Response Fund (DERF) funding for SIGINT.</p> <p>Beginning in FY03 and continuing in FY05 through FY07, the EP-3E platform will receive COMINT/ELINT upgrades. The FY05-FY07 COMINT/ELINT upgrades will be incorporated into the JMOD Common Baseline.</p> <p>FY04 funding includes four Congressional Plus Ups: JMOD Upgrades (\$10.8M), RFD Upgrades (\$2.4M), VME Tuners (\$7.7M) and Tactical Communications Systems Upgrades (\$3.4M).</p> <p>Starting in FY05, the JMOD Baseline is a restructure to the original JMOD program that brings all EP-3E platforms into a single configuration on an accelerated timetable. JMOD Baseline incorporates 60% of JMOD 1 components into the existing EP-3E backbone and accelerates elements of JMOD 2 and 3 via spirals. JMOD Baseline also includes various Quick Reaction Capabilities and OEF/OIF installs and addresses mission avionics obsolescence. This OSIP was restructured to fund the acceleration of JMOD 2 and JMOD 3 capabilities by three years by incorporating their capabilities into the ForceNet and Precision Targeting spirals. FY04 funding procures existing backbone to bring the five conversion aircraft to the configuration necessary to receive JMOD Baseline. This OSIP addresses a PAA of 12 EP-3E aircraft.</p>	
DEVELOPMENT STATUS/MAJOR DEVELOPMENT MILESTONES:	
<p>RDT&amp;E funded development commenced in FY97 with non-recurring engineering for development and integration of a MOD 1 prototype kit installed into an SSIP configured EP-3E aircraft in the beginning of the 1st quarter FY01. The JMOD MOD 1 LRIP decision was based on the JMOD CDR (2nd quarter FY00) and the Baseline Update CDR (3rd quarter FY02). MOD 1 DT/OT has evolved into an FOT&amp;E on upgrades to existing architecture and a DT assist on Story Finder capabilities.</p> <p>Follow on Test and Evaluation is scheduled for 2nd Qtr FY 04 for the existing architecture with obsolescence replacement. In conjunction with this testing, a DT assist will be conducted on Story Finder. These events will provide the basis for a Milestone III decision scheduled for 3rd Qtr FY 04. Spiral 1 is scheduled for test/evaluation in 2nd Qtr FY 05. Spiral 2 test/evaluation is scheduled for a 1st Qtr FY 06. Program reviews will provide authority to procure hardware after each successful OT.</p>	

Exhibit P-3a		INDIVIDUAL MODIFICATION																		
MODIFICATION TITLE: EP-3E Joint Airborne SIGINT Architecture (JASA) Modification Program (JMOD) (OSIP 11-01)																				
MODELS OF SYSTEM AFFECTED: EP-3E		TYPE MODIFICATION: Operational Improvement / Modernization																		
FINANCIAL PLAN (TOA, \$ in Millions):																				
	Prior Years		FY 2003		FY 2004		FY 2005		FY 2006		FY 2007		FY 2008		FY 2009		To Complete		TOTAL	
	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$
RDT&E (H2694)		18.3		2.5		13.3		10.3												
PROCUREMENT																				
Installation Kits																				
BLOCK MOD 1			3	4.0																
VME Tuners	1	.3	1	.8																
IR STROBES MOD	10	.2																		
SINCGARS Upgrade	16	1.2																		
COMINT/ELINT Upgrades				1.9																
RFD Upgrades			4	.4																
JMOD Baseline					5	4.5	4	4.0												
Installation Kits N/R		1.6		3.6		2.9		1.0												
Installation Equipment																				
BLOCK MOD 1			3	11.1																
VME Tuners	1	.5	1	1.9	4	7.7														
IR STROBES MOD	10	.1																		
SINCGARS Upgrade	16	.6																		
DERF SIGINT		14.2																		
COMINT/ELINT Upgrades				7.2																
RFD Upgrades			4	2.0	5	2.4														
JMOD Upgrades					5	10.8														
Tactical Comms System Upg					16	3.4														
JMOD Baseline					5	3.5	4	12.0												
QRC																				
Installation Equipment N/R		15.8		6.4		4.2		1.0												
Engineering Change Orders																				
Data		5.9		1.4		2.4		1.4												
Training Equipment		2.3		2.4		3.4		1.4												
Support Equipment		2.1		.8		.2		.3												
Testing		2.5		4.7		2.0		2.0												
ILS		2.6		3.2		1.9		1.4												
Other Support		3.8		4.0		4.0		2.1												
Interim Contractor Support																				
Installation Cost	16	.7	16	1.9	5	2.2	2	1.6												
TOTAL PROCUREMENT	54	54.3	16	57.6	40	55.4	8	28.3												

Notes:

- Totals do not add due to rounding
- Asterisk indicates amount less than 51K
- Two JMOD 1 kits are funded under the Conversion OSIP (29-00) and one JMOD 1 kit was funded as an R&D TKI.

Exhibit P-3a

MODELS OF SYSTEMS AFFECTED: EP-3E MODIFICATION TITLE: EP-3E Joint Airborne SIGINT Architecture (JASA) Modification Program (JMOD) (OSIP 11-01)  
JMOD Installations/JMOD Baseline

INSTALLATION INFORMATION:

METHOD OF IMPLEMENTATION: Commercial Contractor Installation/O-level

ADMINISTRATIVE LEADTIME: 6/12 Months JMOD PRODUCTION LEADTIME: 6/12 Months

CONTRACT DATES: FY 2003: \_\_\_\_\_ FY 2004: 2/04 FY 2005: 1/05

DELIVERY DATE: FY 2003: \_\_\_\_\_ FY 2004: 8/04 FY 2005: 7/05

(\$ in Millions)

Cost:	Prior years		FY 2003		FY 2004		FY 2005		FY 2006		FY 2007		FY 2008		FY 2009		To Complete		TOTAL		
	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	
FY 2002 & PY (1) kits	1	.1																			
FY 2003 (3) kits *																					
FY 2004 (5) kits **					5	2.2															
FY 2005 (4) kits							2	1.6													
FY 2006 (10) kits																					
FY 2007 (9) kits																					
FY 2008 ( ) kits																					
FY 2009 ( ) kits																					
To Complete (1) kits																					
TOTAL	1	.1			5	2.2	2	1.6													

\* JMOD kits installed into Conversion aircraft (OSIP 29-00).  
 \*\* Installation efforts for FY04 Congressional Plus Ups will be concurrent with the JMOD Baseline installations or Special Structural Inspections (SSIs).

Installation Schedule

FY 2002 & Prior	FY 2003				FY 2004				FY 2005				FY 2006				FY 2007				
	1	2	3	4	1	2	3	4	1	2	3	4*	1	2	3*	4	1	2**	3	4	
In				1				5				2									
Out				1				5				2									

	FY 2008				FY 2009				To Complete	TOTAL
	1**	2	3	4	1	2	3	4		
In										
Out										

\* JMOD Baseline Spiral 1  
 \*\* JMOD Baseline Spiral 2

Exhibit P-3a

MODELS OF SYSTEMS AFFECTED: EP-3E MODIFICATION TITLE: EP-3E Joint Airborne SIGINT Architecture (JASA) Modification Program (JMOD) (OSIP 11-01)  
IR Strobes Mod / SINGARS Upgrade / COMINT/ELINT/RFD Upgrades/SIGINT Tuner

INSTALLATION INFORMATION:

METHOD OF IMPLEMENTATION: Commercial Contractor Installation

ADMINISTRATIVE LEADTIME: 1 Months PRODUCTION LEADTIME: 3/12 Months

CONTRACT DATES: FY 2003: 3/03 FY 2004:        FY 2005:       

DELIVERY DATE: FY 2003: 3/04 FY 2004:        FY 2005:       

(\$ in Millions)

Cost:	Prior Years		FY 2003		FY 2004		FY 2005		FY 2006		FY 2007		FY 2008		FY 2009		To Complete		TOTAL		
	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	
FY 2002 & PY (26) kits	15	.4	11	.4																26	.8
FY 2003 (5) kits *			5	1.5																5	1.5
FY 2004 () kits																					
FY 2005 () kits																					
FY 2006 () kits																					
FY 2007 () kits																					
FY 2008 () kits																					
FY 2009 () kits																					
To Complete () kits																					
<b>TOTAL</b>	15	.4	16	1.9																31	2.3

\* Quantities vary in FY03 for COMINT/ELINT. Congressional Plus up for 4 RFD Upgrades and 1 Tuner are funded in FY03.

Installation Schedule

	FY 2002 & Prior	FY 2003				FY 2004				FY 2005				FY 2006				FY 2007			
		1	2	3*	4**	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
In	15	5	6	4	1																
Out	15				11			4	1												

	FY 2008				FY 2009				To Complete	TOTAL
	1	2	3	4	1	2	3	4		
In										31
Out										31

\* RFD Upgrades will be installed into 4 Conversion aircrafts.  
 \*\* SIGINT Tuner will be installed into a Conversion aircraft.

CLASSIFICATION: UNCLASSIFIED

BUDGET ITEM JUSTIFICATION SHEET						DATE:																																																																																																																																																					
P-40						February 2004																																																																																																																																																					
APPROPRIATION/BUDGET ACTIVITY						P-1 ITEM NOMENCLATURE																																																																																																																																																					
Aircraft Procurement, Navy/APN-5 Aircraft Modifications						P-3 Series Modifications																																																																																																																																																					
Program Element for Code B Items:						Other Related Program Elements																																																																																																																																																					
	Prior Years	ID Code	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	To Complete	Total																																																																																																																																																
QUANTITY																																																																																																																																																											
COST (In Millions)	2,194.5		167.8	139.2	135.0	158.2	126.3	96.2	139.6	1,960.8	5,117.5																																																																																																																																																
<p>This line item funds modifications to P-3 aircraft. The P-3 Orion is a 4 engine, long-range maritime surveillance aircraft which performs Anti-Submarine (ASW) and Anti-Surface Warfare (ASUW) in support of battle group and littoral operations. The overall goal of the modifications budgeted in FY2005 is to continue the USQ-78 installation (part of Update III), weapon system improvements, upgrading and refurbishing airframe components and systems. Total aircraft inventory is 150. The P-3C has an average service life of 29.5 years. The specific modifications budgeted and programmed are:</p> <p style="text-align: center;">(TOA, \$ in Millions)</p> <table border="1"> <thead> <tr> <th>QSIP No.</th> <th>Description</th> <th>Prior Years</th> <th>FY 2003</th> <th>FY 2004</th> <th>FY 2005</th> <th>FY 2006</th> <th>FY 2007</th> <th>FY 2008</th> <th>FY 2009</th> <th>To Complete</th> <th>Total</th> </tr> </thead> <tbody> <tr> <td>80-84</td> <td>Update III Block Upgrade</td> <td>1039.5</td> <td>13.1</td> <td>15.4</td> <td>28.5</td> <td>53.7</td> <td>22.4</td> <td></td> <td></td> <td>103.6</td> <td>1276.3</td> </tr> <tr> <td>53-85</td> <td>Critical Systems Improvements</td> <td>25.5</td> <td>2.9</td> <td>3.2</td> <td>0.6</td> <td>0.4</td> <td>0.9</td> <td>0.4</td> <td>0.4</td> <td></td> <td>34.3</td> </tr> <tr> <td>60-86</td> <td>UHF/VHF Comm. Update</td> <td>115.4</td> <td>6.4</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td>121.8</td> </tr> <tr> <td>42-92</td> <td>Counter Narcotics Improv Prog</td> <td>3.8</td> <td>2.6</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td>6.4</td> </tr> <tr> <td>29-94</td> <td>ASUW Improv. Prog.</td> <td>907.5</td> <td>126.5</td> <td>93.9</td> <td>53.8</td> <td>5.9</td> <td></td> <td></td> <td>48.5</td> <td>1636.0</td> <td>2872.2</td> </tr> <tr> <td>34-99</td> <td>Additional Aircraft #1</td> <td>41.0</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td>41.0</td> </tr> <tr> <td>22-00</td> <td>Additional Aircraft #2</td> <td>48.1</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td>48.1</td> </tr> <tr> <td>13-01</td> <td>CNS/ATM</td> <td>13.7</td> <td>16.3</td> <td>10.8</td> <td>14.1</td> <td>21.8</td> <td>20.8</td> <td>15.7</td> <td>15.0</td> <td>18.7</td> <td>146.9</td> </tr> <tr> <td>04-04</td> <td>P-3 Critical Obsolscence Program</td> <td></td> <td></td> <td>15.9</td> <td>19.9</td> <td>43.0</td> <td>44.3</td> <td>42.6</td> <td>43.0</td> <td>36.5</td> <td>245.1</td> </tr> <tr> <td>05-05</td> <td>P-3/EP-3 Special Structural Inspection Kits</td> <td></td> <td></td> <td></td> <td>18.1</td> <td>33.4</td> <td>37.9</td> <td>37.5</td> <td>32.7</td> <td>165.9</td> <td>325.4</td> </tr> <tr> <td>TOTAL</td> <td></td> <td>2194.5</td> <td>167.8</td> <td>139.2</td> <td>135.0</td> <td>158.2</td> <td>126.3</td> <td>96.2</td> <td>139.6</td> <td>1960.8</td> <td>5117.5</td> </tr> </tbody> </table>												QSIP No.	Description	Prior Years	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	To Complete	Total	80-84	Update III Block Upgrade	1039.5	13.1	15.4	28.5	53.7	22.4			103.6	1276.3	53-85	Critical Systems Improvements	25.5	2.9	3.2	0.6	0.4	0.9	0.4	0.4		34.3	60-86	UHF/VHF Comm. Update	115.4	6.4								121.8	42-92	Counter Narcotics Improv Prog	3.8	2.6								6.4	29-94	ASUW Improv. Prog.	907.5	126.5	93.9	53.8	5.9			48.5	1636.0	2872.2	34-99	Additional Aircraft #1	41.0									41.0	22-00	Additional Aircraft #2	48.1									48.1	13-01	CNS/ATM	13.7	16.3	10.8	14.1	21.8	20.8	15.7	15.0	18.7	146.9	04-04	P-3 Critical Obsolscence Program			15.9	19.9	43.0	44.3	42.6	43.0	36.5	245.1	05-05	P-3/EP-3 Special Structural Inspection Kits				18.1	33.4	37.9	37.5	32.7	165.9	325.4	TOTAL		2194.5	167.8	139.2	135.0	158.2	126.3	96.2	139.6	1960.8	5117.5
QSIP No.	Description	Prior Years	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	To Complete	Total																																																																																																																																																
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<p>* Indicates value less than \$51,000. Totals may vary due to rounding</p>																																																																																																																																																											

CLASSIFICATION:

Exhibit P-3a	INDIVIDUAL MODIFICATION
MODIFICATION <u>Update III Block Upgrade (OSIP 80-84)</u>	
MODELS OF SYSTEM AFFECTED <u>P-3C</u>	TYPE MODIFICATION <u>Operational Improvement</u>
<p>DESCRIPTION/JUSTIFICATION:</p> <p>The Update III Common Configuration provides the Fleet with significantly improved anti-submarine warfare detection and classification which are essential for target prosecution in average and poor water conditions. This program will modify older P-3's to an Update III common configuration. This modification includes associated processors, receivers, displays, and recorders. Update III Common Configuration is comprised of two major efforts: the Block Modification Upgrade program and the AN/USQ-78 Upgrade program. Both are based on Decision Coordinating Paper W-080-AS and the Program Management Plan #0526 serial 902D/6U324405. The objective of the Block Modification Upgrade program is to standardize the Maritime Patrol Aircraft fleet to the Update III configuration. This will update the configuration of 25 Update I, II, and II.5 aircraft towards the total sustainment inventory requirement of 150 Update III configured aircraft. Eight of the 25 aircraft are Reserve assets. The objective of the AN/USQ-78 Upgrade program is to correct display shortcomings of the USQ-78 system as identified by Fleet Operational Advisory Group and by Operational Test and Evaluation, to provide for future workload sharing capability as directed by Chief Naval Operations (CNO) and processing growth for the life of the aircraft. Total aircraft and lab trainers to be modified by Loral ECP #LFS-95-001R2 is 160.</p> <p>FY-02 SEI Congressional Plus-up provides associated NRE, 8 units, and installs as initial integration of new capability.</p> <p>FY-02 Congressional Plus-up provides NRE for Acoustic Data Recorder-Digital (ADR-D) input enhancements, a prototype digital model (EDM) and 31 ADR-D upgrade kits.</p> <p>FY-03 Congressional Plus-up provides associated NRE for 8 units to upgrade and install (ALR-95).</p> <p>FY-03 Congressional Plus-up provides 10 additional ADR-D kits with some NRE for obsolescence issues.</p> <p>FY-03 Congressional Plus-up for USQ-78(V) will be used to upgrade existing USQ78(V) hardware for technical refresh and End of Life (EOL) requirements.</p> <p>FY-04 Congressional Plus-up upgrades the ADR tape transport to a hard drive configuration for reliability and maintainability.</p> <p>DEVELOPMENT STATUS/MAJOR DEVELOPMENT MILESTONES:</p> <p>Update III received approval for limited production in December 1983 and December 1984. Approval for full production was received in January 1986.</p>	

Exhibit P-3a		INDIVIDUAL MODIFICATION																			
MODIFICATION TITLE: <u>Update III Block Upgrade (OSIP 80-84)</u>																					
MODELS OF SYSTEM AFFECTED: <u>P-3C</u>										TYPE MODIFICATION <u>Operational Improvement</u>											
FINANCIAL PLAN (TOA, \$ in Millions):																					
	Prior Years		FY 2003		FY 2004		FY 2005		FY 2006		FY 2007		FY 2008		FY 2009		To Complete		TOTAL		
	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	
RDT&E																					
PROCUREMENT																					
Installation Kits																					
Prior Year Kits	434	72.5																			
MK-50 Kits	147	4.0																			
USQ-78(V) Kits	53	9.0			2	1.3	25	4.6													
Block Mod Upgrade Kits	8	9.9																			
Installation Kits N/R		65.7				2.2															
Installation Equipment																					
Prior Year Equipment	1,181	349.8																			
CP-2044/ASQ CPU Equip	121	64.1																			
USQ-78(V)/CHRDS Equip	53	83.7			2	5.8	25	20.3													
CHRDS Equip	4	.1																			
Block 1C Harpoon Equip	148	5.1																			
AN/ASH-33/RDDS	221	24.3																			
Common CONFIG Equip	22	64.0																			
PEP Equip	25	6.4																			
DASD/DASD Docks Equip	118	1.0			4	*	50	.5													
ADR/DDR		11.3		2.4		2.8															
SEI Cards		2.1																			
ESEI Hardware		1.1		1.8																	
LESPA Equip		19.0																			
Notes:																					
1. Asterick indicates amount less than 51K																					
																Exhibit P-3a					

Exhibit P-3a		INDIVIDUAL MODIFICATION																			
MODIFICATION TITLE: <u>Update III Block Upgrade (OSIP 80-84)</u>																					
MODELS OF SYSTEM AFFECTED: <u>P-3C</u> TYPE MODIFICATION <u>Operational Improvement</u>																					
FINANCIAL PLAN (TOA, \$ in Millions):																					
	Prior Years		FY 2003		FY 2004		FY 2005		FY 2006		FY 2007		FY 2008		FY 2009		To Complete		TOTAL		
	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	
RDT&E																					
Installation Equipment N/R		56.6		5.3				.5													
Engineering Change Orders																					
Data		16.8																			
Training Equipment		17.4																			
Support Equipment		1.6																			
ILS		3.7																			
Other Support		117.7		1.1		1.9		2.5													
Interim Contractor Support																					
Installation Cost	526	32.3	6	2.5	15	1.4	2	.2													
<b>TOTAL PROCUREMENT</b>	<b>2,535</b>	<b>1,039.5</b>		<b>13.1</b>	<b>8</b>	<b>15.4</b>	<b>100</b>	<b>28.5</b>													
Notes:																					
1. Totals do not add due to rounding																					
2. Asterick indicates amount less than 51K																					
																Exhibit P-3a					

Exhibit P-3a  
 MODELS OF SYSTEMS AFFECTED: P-3C MODIFICATION TITLE: Update III Block Upgrade (OSIP 80-84) USQ-78A

INSTALLATION INFORMATION:

METHOD OF IMPLEMENTATION: Installation will be accomplished on-site by contractor field team

ADMINISTRATIVE LEADTIME: 4 Months PRODUCTION LEADTIME: 18 Months

CONTRACT DATES: FY 2003: \_\_\_\_\_ FY 2004: 10/03 FY 2005: 10/04

DELIVERY DATE: FY 2003: \_\_\_\_\_ FY 2004: 4/05 FY 2005: 4/06

(\$ in Millions)

Cost:	Prior Years		FY 2003		FY 2004		FY 2005		FY 2006		FY 2007		FY 2008		FY 2009		To Complete		TOTAL		
	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	
FY 2002 & PY (53) kits	33	1.9	5	.3	15	1.4															
FY 2003 ( ) kits																					
FY 2004 (2) kits							2	.2													
FY 2005 (25) kits																					
FY 2006 (43) kits																					
FY 2007 (8) kits																					
FY 2008 ( ) kits																					
FY 2009 ( ) kits																					
To Complete (19) kits																					
<b>TOTAL</b>	<b>33</b>	<b>1.9</b>	<b>5</b>	<b>.3</b>	<b>15</b>	<b>1.4</b>	<b>2</b>	<b>.2</b>													

\*\* FY07 funds installs for FY07-FY09.

Installation Schedule

	FY 2002 & Prior	FY 2003				FY 2004				FY 2005				FY 2006				FY 2007				
		1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	
In	33	1	1	1	2	3	4	4	4			2										
Out	33	1	1	1	2	3	4	4	4			2										

	FY 2008				FY 2009				To Complete	TOTAL
	1	2	3	4	1	2	3	4		
In										
Out										

Completions same as inductions; one week effort.

- USQ-78A to be installed in trainers as depicted in the APN-5 install portion of the OSIP.

Exhibit P-3a

MODELS OF SYSTEMS AFFECTED: P-3C MODIFICATION TITLE: Update III Block Upgrade (OSIP 80-84) Block Mod Upgrade

INSTALLATION INFORMATION:

METHOD OF IMPLEMENTATION: Installation will be accomplished at contractor's facility.

ADMINISTRATIVE LEADTIME: 4 Months PRODUCTION LEADTIME: 24 Months

CONTRACT DATES: FY 2003:      FY 2004:      FY 2005:     

DELIVERY DATE: FY 2003:      FY 2004:      FY 2005:     

(\$ in Millions)

Cost:	Prior Years		FY 2003		FY 2004		FY 2005		FY 2006		FY 2007		FY 2008		FY 2009		To Complete		TOTAL	
	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$
FY 2002& PY (8) kits	7	8.7	1	1.5															8	10.3
FY 2003 () kits																				
FY 2004 () kits																				
FY 2005 () kits																				
FY 2006 () kits																				
FY 2007 () kits																				
FY 2008 () kits																				
FY 2009 () kits																				
To Complete () kits																				
<b>TOTAL</b>	<b>7</b>	<b>8.7</b>	<b>1</b>	<b>1.5</b>															<b>8</b>	<b>10.3</b>

**NOTE:** Block Mod Upgrade modifies 25 aircraft; 15 install kits and installations funded via a separate program outside OSIP 80-84; 8 install kits and installations reflected above are for USNR; 2 install kits and installations support validation effort through NRE.

Installation Schedule

	FY 2002 & Prior	FY 2003				FY 2004				FY 2005				FY 2006				FY 2007				
		1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	
In	7	1																				
Out	2	1	2	2	1																	

	FY 2008				FY 2009				To Complete	TOTAL
	1	2	3	4	1	2	3	4		
In										8
Out										8

Exhibit P-3a	INDIVIDUAL MODIFICATION
MODIFICATION TITLE: <u>Critical Systems Improvements (OSIP 53-85)</u>	
MODELS OF SYSTEM AFFECTED: <u>P-3C</u>	TYPE MODIFICATION <u>Readiness</u>
DESCRIPTION/JUSTIFICATION:	
<p>The purpose of this program is to provide the requisite funding to implant various minor cost effective changes to critical P-3 weapon systems. These changes are essential to the operation of the aircraft and/or its mission systems, but are not currently being addressed by an existing aircraft modification program. The changes can be either airframe, avionics, or procedures.</p> <p>SINGLE ARMAMENT CONTROL PANEL (SACP) ECP JAX P3-649: This ECP replaces existing 9622068 Wing Jettison/Special Weapon Control Box and the A-393 Pilot's Armament Control Box in 228 P-3C aircraft with the PEU-196/A Pilot's Armament Control Box.</p> <p>KAPTAN WIRING REPLACEMENT MOD ECP JAX P3-610: This ECP replaces the Kapton wiring in the wing trailing edge of P-3C aircraft. The initial program will modify 97 P-3C aircraft.</p> <p>STRUCTURAL DATA RECORDING SYSTEM (SDRS) ECP SEI 196-1A: The SDRS (ASH-37) CCB was approved in June of 1994 to install the ASH-37 in all P-3C aircraft. The funding to procure and install the kits was provided by OSIP 5-93. The funding for SDRS ended in FY95. The task covered in this OSIP include SDRS Pubs, SDRS data reduction and installation of last 20 kits.</p> <p>STANDBY ATTITUDE INDICATOR (PEANUT GYRO) ECP BFGAAS ID-1481A/A-25583-48: This ECP modifies the P-3C Standby Attitude Indicator (Peanut Gyro) to operate with a DC power vice an AC power. This modification is planned for 150 P-3C's and 3 trainers.</p> <p>E-J RECEIVER MOD AN/ALR-66 B(V)3 ECP LITTON 970: The AN/ALR-66B(V)3 ECP upgrades certain components of the AN/ALR-66A(V)3 ESM to improve system performance, including the E-J Amplifier Receivers, CD Amplifier Receivers, Processor Interface and Computer Converter. The effort under this OSIP supports the modification and certain RIM in support of AN/ALR-66 B(V)3 installs on 145 P-3C aircraft, 6 operational trainers and 10 test bench installations.</p> <p>APS-115 FEEDBALL MODIFICATION ECP CUBIC 2509-02F3: This ECP are liability and performance improvement to the APS-115 radar feedball. The unmodified feedballs are susceptible to burning out which decreased the APS 115 sensitivity (or caused failure) and made the feedball incompatible with the AN/ALR-66 B(V)3 ESM system, which uses the feedball as the center channel receiver. This modified will be installed in all APS-115 equipped aircraft. This modification effects 90 P-3C aircraft.</p> <p>P-3 PILOT/COPILOT/ PLANE CAPTAIN SEAT MODIFICATION FOR THE MA-16 INERTIA REEL ECP JAX P3-519: MA-1 and MA-2 Inertia Reels are no longer available in the supply system and further procurement is anticipated. This ECP provides a kit to modify 50 Pilot/Copilot/Plane Captain seats to install the MA-16 Inertia Reel as a substitute for the MA-1/2 to meet outstanding requirements.</p> <p>FOLLOW-ON KAPTAN WIRING REPLACEMENT (WHEEL WELLS) ECP TBD: The Kapton Wiring in the landing gear retraction housing areas (wheel wells) will require replacement due to weather exposure. Initial program will modify 18 P-3C aircraft.</p> <p>DIGITAL AUTOPILOT: An FY02 Congressional Plus-Up provides funding to perform NRE, procure, install and test a Digital Autopilot in the P-3C as a replacement for the ASW-31 system, which is highly unreliable and costly to maintain. An FY-03 Congressional Plus-Up provides funding to procure and install four Digital Autopilot systems.</p> <p>AIRCRAFT HEALTH MONITORING SYSTEM (AHMS) ECP N/A: An FY02 Congressional Plus-Up provides NRE funding to develop an AHMS for the P-3C which can monitor critical aircraft systems (engines, structures, electrical, avionics) to identify items that require maintenance or repair. An FY-03 Congressional Plus-Up provides funding to test an AHMS in a P-3C.</p> <p>INFRA-RED (IR) STROBES ECP JAX P3-776: FY-02 Defense Emergency Response Fund (DERF) funding for 100 IR strobes for P-3 aircraft.</p> <p>HUB INTEGRATED POWER SWITCHING SYATEM/PROPELLER BALANCING MONITORING SYSTEM (PBMS): An FY-04 Congressional Plus-Up provides funding to install and test a new propeller hub mounted system for power generation and in-flight measurement of propeller vibration and balancing requirements.</p>	
DEVELOPMENT STATUS/MAJOR DEVELOPMENT MILESTONES:	
<p>The changes identified are minor and do not require approval for full production.</p>	

Exhibit P-3a

INDIVIDUAL MODIFICATION

Exhibit P-3a

MODIFICATION TITLE: Critical Systems Improvements (OSIP 53-85)

MODELS OF SYSTEM AFFECTED: P-3C

TYPE MODIFICATION Readiness

FINANCIAL PLAN (TOA, \$ in Millions):

	Prior Years		FY 2003		FY 2004		FY 2005		FY 2006		FY 2007		FY 2008		FY 2009		To Complete		TOTAL		
	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	
RDT&E																					
PROCUREMENT																					
Installation Kits																					
APS-115 Feedball Mod	90	1.6																			
EJ Receiver Mod	145	**																			
Single Arm Cont Panel (SACP)	228	.7																			
Kapton Wire Replace (Wings)	97	1.0																			
Kapton Wire Replace (Wheel Well)																					
Standby (Peanut) Gyro Mod	61	.3	5	*	18	.1	13	.1													
AHMS			1	.1																	
Digital Autopilot	5	.1																			
HIPSS/PBMS					20	.1															
Infra-Red (IR) Strokes	100	.5																			
MA-16 Inertial Reel Mod kits	50	.1																			
Prior Years Kits	171	7.6																			
Installation Kits N/R		3.7		.7		1.1															
Installation Equipment																					
AHMS			1	**																	
Digital Autopilot	5	1.1																			
HIPSS/PBMS					20	.3															
Infra-Red (IR) Strokes	100	.5																			
Installation Equipment N/R																					
Engineering Change Orders																					
Data		2.2		.2		.1		.3													
Training Equipment		.3		.1				*													
Support Equipment		.2																			
ILS		*		.1																	
Other Support		2.4		1.5		1.0		.2													
Interim Contractor Support																					
Installation Cost		3.2		.1		.4															
TOTAL PROCUREMENT	1,052	25.5	7	2.9	58	3.2	13	.6													

Notes:

- Totals do not add due to rounding
- Asterick indicates amount less than 51K      \*\* AHMS Equipment on Loan from Contractor.

Exhibit P-3a

Exhibit P-3a

MODELS OF SYSTEMS AFFECTED: IP-3C MODIFICATION TITLE: Critical Systems Improvement (OSIP 53-85) Kapton Wiring (Wings)

INSTALLATION INFORMATION:

METHOD OF IMPLEMENTATION: Contractor Field Mod Team

ADMINISTRATIVE LEADTIME:          Months PRODUCTION LEADTIME     5     Months

CONTRACT DATES: FY 2003:      FY 2004:      FY 2005:     

DELIVERY DATE: FY 2003:      FY 2004:      FY 2005:     

(\$ in Millions)

Cost:	Prior Years		FY 2003		FY 2004		FY 2005		FY 2006		FY 2007		FY 2008		FY 2009		To Complete		TOTAL	
	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$
FY 2002 & PY (97) kits	96	.9	1	*															97	.9
FY 2003 () kits																				
FY 2004 () kits																				
FY 2005 () kits																				
FY 2006 () kits																				
FY 2007 () kits																				
FY 2008 () kits																				
FY 2009 () kits																				
To Complete () kits																				
<b>TOTAL</b>	96	.9	1	*															97	.9

Installation Schedule

	FY 2002	FY 2003				FY 2004				FY 2005				FY 2006				FY 2007				
	& Prior	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	
In	96				1																	
Out	96				1																	

	FY 2008				FY 2009				To Complete	TOTAL
	1	2	3	4	1	2	3	4		
In										97
Out										97

Exhibit P-3a

MODELS OF SYSTEMS AFFECTED: P-3C MODIFICATION TITLE: Critical Systems Improvement (OSIP 53-85) Kapton Wiring (Wheel Well)

INSTALLATION INFORMATION:

METHOD OF IMPLEMENTATION: Contractor Field Mod Team

ADMINISTRATIVE LEADTIME:                      Months PRODUCTION LEADTIME     5     Months

CONTRACT DATES: FY 2003:      FY 2004:      FY 2005:     

DELIVERY DATE: FY 2003:      FY 2004:      FY 2005:     

(\$ in Millions)

Cost:	Prior Years		FY 2003		FY 2004		FY 2005		FY 2006		FY 2007		FY 2008		FY 2009		To Complete		TOTAL		
	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	
FY 2002 & PY () kits																					
FY 2003 () kits																					
FY 2004 () kits																					
FY 2005 () kits																					
FY 2006 () kits																					
FY 2007 (18) kits																					
FY 2008 () kits																					
FY 2009 () kits																					
To Complete () kits																					
TOTAL																					

Installation Schedule

FY 2002 & Prior	FY 2003				FY 2004				FY 2005				FY 2006				FY 2007				
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	
In																					
Out																					

	FY 2008				FY 2009				To Complete	TOTAL
	1	2	3	4	1	2	3	4		
In										
Out										

Exhibit P-3a

MODELS OF SYSTEMS AFFECTE P-3C MODIFICATION TITLE: Critical Systems Improvement (OSIP 53-85) Digital Autopilot

INSTALLATION INFORMATION:

METHOD OF IMPLEMENTATION: Contractor Field Mod Team

ADMINISTRATIVE LEADTIME: 5 Months PRODUCTION LEADTIME: 8 Months

CONTRACT DATES: FY 2003: \_\_\_\_\_ FY 2004: \_\_\_\_\_ FY 2005: \_\_\_\_\_

DELIVERY DATE: FY 2003: \_\_\_\_\_ FY 2004: \_\_\_\_\_ FY 2005: \_\_\_\_\_

(\$ in Millions)

Cost:	Prior Years		FY 2003		FY 2004		FY 2005		FY 2006		FY 2007		FY 2008		FY 2009		To Complete		TOTAL	
	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$
FY 2002 & PY(5) kits	*	.4	1	*	4	*													5	.4
FY 2003 () kits																				
FY 2004 () kits																				
FY 2005 () kits																				
FY 2006 () kits																				
FY 2007 () kits																				
FY 2008 () kits																				
FY 2009 () kits																				
To Complete () kits																				
<b>TOTAL</b>	*	.4	1	*	4	*													5	.4

\* FY02 Congressional Add funds (5) install.

Installation Schedule

	FY 2002	FY 2003				FY 2004				FY 2005				FY 2006				FY 2007				
	& Prior	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	
In					1				4													
Out					1				4													

	FY 2008				FY 2009				To Complete	TOTAL
	1	2	3	4	1	2	3	4		
In										5
Out										5

Exhibit P-3a

MODELS OF SYSTEMS AFFECTED: P-3C MODIFICATION TITLE: Critical Systems Improvement Program (OSIP 53-85) Structural Data Recorder Set

INSTALLATION INFORMATION:

METHOD OF IMPLEMENTATION:

ADMINISTRATIVE LEADTIME: \_\_\_\_\_ Months PRODUCTION LEADTIME: \_\_\_\_\_ Months

CONTRACT DATES: FY 2003: \_\_\_\_\_ FY 2004: \_\_\_\_\_ FY 2005: \_\_\_\_\_

DELIVERY DATE: FY 2003: \_\_\_\_\_ FY 2004: \_\_\_\_\_ FY 2005: \_\_\_\_\_

(\$ in Millions)

Cost:	Prior Years		FY 2003		FY 2004		FY 2005		FY 2006		FY 2007		FY 2008		FY 2009		To Complete		TOTAL		
	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	
FY 2002 & PY (4) kits	4	.1																		4	.1
FY 2003 () kits																					
FY 2004 () kits																					
FY 2005 () kits																					
FY 2006 () kits																					
FY 2007 () kits																					
FY 2008 () kits																					
FY 2009 () kits																					
To Complete () kits																					
TOTAL	4	.1																		4	.1

\*NOTE: Four (4) previously procured SDRS kits are being installed in FY02 due to aircraft availability.

Installation Schedule

	FY 2002 & Prior	FY 2003				FY 2004				FY 2005				FY 2006				FY 2007				
		1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	
In	4																					
Out	4																					

	FY 2008				FY 2009				To Complete	TOTAL
	1	2	3	4	1	2	3	4		
In										4
Out										4

Exhibit P-3a	INDIVIDUAL MODIFICATION
MODIFICATION TITLE <u>Ultra High Frequency (UHF)/Very High Frequency (VHF) Communications Update (OSIP 60-86)</u>	
MODELS OF SYSTEM AFFECTED: <u>P-3A/B/C &amp; 4 Special Projects</u>	TYPE MODIFICATION <u>Readiness</u>
DESCRIPTION/JUSTIFICATION:	
<p>P-3 aircraft have an operational requirement for UHF satellite communications (SATCOM) , and currently have satellite capable communications suites. JCS Memo CJCSI 6251.01 OF 31 July 1996 modified SATCOM access to require Advanced Narrowband Digital Voice Terminal (ANDVT) and Demand Assigned Multiple Access (DAMA) standards by 30 September 1996. In addition, the ARC-101 VHF radio does not have a 25KHz channel capability and does not comply with Air Traffic Control regulations and represents a potential safety of flight issue. The older UHF and VHF (ARC-143 and ARC-101) radios suffer from considerable degraded performance because of crosstalk sensitivity, lack of channel selectivity, intermodulation and are not compatible with the JCS satellite access requirements. The ARC-182 is the Navy's standard VHF radio and corrects the VHF deficiencies. In FY 1993, Vinson Baseband kits were procured to provide succinct channel identification for the ARC-187 radios currently installed in P-3 aircraft.</p>	
<p>The FY 1994 and subsequent programs will bring 108 P-3C aircraft to a common radio configuration which meets all requirements for SATCOM and Havequick. 108 P-3C aircraft will receive the ANDVT/SATCOM (CIP) installation. Additionally, 32 P-3C A/C will have the ARC-182 radio installed in conjunction with CIP and 23 aircraft will have the ARC-187 radio (2 per A/C) installed in conjunction with CIP. Some of the ARC-182 and/or ARC-187 installations may occur as stand-alone to meet fleet requirements.</p>	
<p>P-3C Communications Improvement Program (CIP) Engineering Change Proposal (ECP) Lockheed 1025: This ECP covers the installation of the kit and equipment necessary for DAMA SATCOM which includes the AN/ARC-187/VIASAT Modem combination, modified ARC-187 Controls and Advanced Narrowband Digital Voice Terminal (ANDVT). In aircraft that presently do not have an ARC-187 UHF and/or ARC-182 VHF radios installed, ECP 988 (UHF) and/or ECP 990 (VHF) will be installed in conjunction with ECP 1025 or through stand-alone installations.</p>	
<p>This OSIP update reflects program funding termination as of FY03.</p>	
DEVELOPMENT STATUS/MAJOR DEVELOPMENT MILESTONES:	
<p>The ARC-182 and ARC-187 radios have Approval for Full Production (AFP) and are verified in the P-3 aircraft. ECP 1025 (CIP) was approved in January 1997. DAMA SATCOM certification for the ARC-187/Viasat Modem combination was received in March 1998.</p>	
Exhibit P-3a	

Exhibit P-3a		INDIVIDUAL MODIFICATION																			
MODIFICATION TITLE:		Ultra High Frequency (UHF)/Very High Frequency (VHF) Communications Update (OSIP 60-86)																			
MODELS OF SYSTEM AFFECTED:		P-3A/B/C & 4 Special Projects										TYPE MODIFICATION: Readiness									
FINANCIAL PLAN (TOA, \$ in Millions):																					
	Prior Years		FY 2003		FY 2004		FY 2005		FY 2006		FY 2007		FY 2008		FY 2009		To Complete		TOTAL		
	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	
RDT&E																					
PROCUREMENT																					
Installation Kits																					
AFC(P-3C)ARC-182	166	3.4																	166	3.4	
AFC(P-3C)ARC-187	186	2.6																	186	2.6	
AFC(P-3A/B)ARC-182	11	.3																	11	.3	
AFC(P-3C)UHF/VHF UPGRADE	26	.3																	26	.3	
AFC(P-3C)KG-84	143	2.6																	143	2.6	
AFC(P-3C)SATCOM COMPATIB	141	1.6																	141	1.6	
AFC(P-3C)VINSON BASEBAND	378	2.2																	378	2.2	
AFC(P-3C) CIP (ANDVT/DAMA)	88	2.3	20	.6															108	2.9	
Installation Kits N/R		27.4																		27.4	
Installation Equipment																					
ARC-187 (2 per A/C)	374	19.0																	374	19.0	
ARC-187 POWER SUPPLY MOD	90	.5																	90	.5	
ARC-210	10	.4																	10	.4	
ARC-182**	179	4.2																	179	4.2	
ARC-187 Control (2 per A/C)	194	2.8	40	.8															234	3.5	
CRYPTO Fill Port (2 per A/C)	208	.3	40	.1															248	.3	
Interface Adapter Assembly (IAA)	91	.4	20	.1															111	.5	
Diplexer	91	.4	20	.1															111	.6	
Modem (1 per A/C)	106	4.0	11	.3															117	4.3	
ANDVT	91	***	20	***															111	***	
Installation Equipment N/R		3.1																		3.1	
Engineering Change Orders																					
Data		6.2		.5																6.7	
Training Equipment	68	3.7																	68	3.7	
Support Equipment		2.3																		2.3	
ILS		1.7		.5																2.2	
Other Support		13.9		1.8																15.7	
Interim Contractor Support																					
Installation Cost	1,096	9.7	79	1.6															1,175	11.3	
TOTAL PROCUREMENT	2,641	115.5	171	6.4															2,812	121.8	

Notes:  
 1. Totals do not add due to rounding      \*\* AN/ARC-182 radios to be obtained from F/A18 or other aircraft installing AN/ARC-210 radios.  
 2. Asterisk indicates amount less than 51K      \*\*\* ANDVT provided by NSA.      \*\*\*\* Included in Prototype A-Kit cost.

Exhibit P-3a

Exhibit P-3a

MODELS OF SYSTEMS AFFECTED: P-3A/B/C MODIFICATION TITLE: Ultra High Frequency (UHF)/Very High Frequency (VHF) Communications Update (OSIP 60-86)

INSTALLATION INFORMATION:

METHOD OF IMPLEMENTATION: P-3A/B/C & 4 Special Projects

ADMINISTRATIVE LEADTIME: 6 Months PRODUCTION LEADTIME: 10 Months

CONTRACT DATES: FY 2003: 2/03 FY 2004:        FY 2005:       

DELIVERY DATE: FY 2003: 12/03 FY 2004:        FY 2005:       

(\$ in Millions)

Cost:	Prior Years		FY 2003		FY 2004		FY 2005		FY 2006		FY 2007		FY 2008		FY 2009		To Complete		TOTAL		
	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	
FY 2002 & PY (1155) kits	1,096	9.7	37	.9	22	**														1,155	10.6
FY 2003 (20) kits				.7	20	**														20	.8
FY 2004 () kits																					
FY 2005 () kits																					
FY 2006 () kits																					
FY 2007 () kits																					
FY 2008 () kits																					
FY 2009 () kits																					
To Complete () kits																					
<b>TOTAL</b>	<b>1,096</b>	<b>9.7</b>	<b>37</b>	<b>1.6</b>	<b>42</b>	<b>**</b>														<b>1,175</b>	<b>11.3</b>

\*\* FY03 funds installs in FY04.

Installation Schedule

	FY 2002 & Prior	FY 2003				FY 2004				FY 2005				FY 2006				FY 2007				
		1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	
In	1096	3	11	11	12	10	10	11	11													
Out	1096	3	11	11	12	10	10	11	11													

	FY 2008				FY 2009				To Complete	TOTAL
	1	2	3	4	1	2	3	4		
In										1175
Out										1175

Exhibit P-3a	INDIVIDUAL MODIFICATION																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																		
MODIFICATION TITLE <u>Anti-Surface Warfare (ASUW) Improvement Program (OSIP 29-94)</u>																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																			
MODELS OF SYSTEM AFFECTED: <u>P-3C</u>	TYPE MODIFICATION <u>Operational Improvement</u>																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																		
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<p>The Navy's Maritime Patrol and Reconnaissance Force (primarily P-3C Orion aircraft) provides three deliverables to Navy and joint commanders worldwide: Undersea warfare; Intelligence Surveillance, and Reconnaissance; and Maritime Surveillance Targeting. The ASUW Improvement Program meets the Navy's requirement to rapidly provide a significant increase in the current P-3's ability to perform Anti-Submarine Warfare (ASW), Anti-Surface Warfare (ASUW), Over-the-Horizon Targeting (OTH-T), and Command, Control, Communications, Computers, and Intelligence (C<sup>4</sup>). The target aircraft for this modification are P-3C Update II/II.5 and Update III. This modification focuses on improving the weapon system's capability for standoff targeting and classification. Significant sensor improvements and capabilities are provided by the APS-137D (V) 5 imaging radar, the Advanced Imaging Multi-Spectral Sensor (AIMS) electro optical/infrared system, and ESM upgrades that include Specific Emitter Identification (SEI), SEI Utility Improvement, ALR-95, improved pulse processing, and DF accuracy. C<sup>4</sup> is improved with a DAMA Satcom radio suite and Multi-mission Advanced Tactical Terminal (MATT) that can receive the Officer in Tactical Command Information Exchange System (OTCIXS), and other fleet broadcasts. Additional planned Phased Capability Upgrade (PCU) improvements include the Maritime Surveillance Targeting (MST) capability as well as Tactical Common Data Link (TCDL). Survivability enhancements include the ALE-47/AAR-47 missile warning countermeasures, explosive suppressant foam, and small circular area of probability weapon system (Maverick, SLAM, SLAM-ER, and provisions to carry and launch all Mil Std 1760 Digital weapons such as JSOW). Additional funding in FY1995 and FY1996 was utilized to meet an urgent fleet requirement to upgrade 17 Pre-AIP aircraft with Maverick armament control kits. The P3 AIP operational requirement document (ORD) is Ser # 355-88-94.</p>																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																			
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Exhibit P-3a

MODELS OF SYSTEMS AFFECTED: P-3C MODIFICATION TITLE: Anti-Surface Warfare (ASUW) Improvement Program (OSIP 29-94)

INSTALLATION INFORMATION:

METHOD OF IMPLEMENTATION: Installation through FY98 funded turn-key operation. Installation for FY99 and out years funded in the year they occur.

ADMINISTRATIVE LEADTIME: 1 Months PRODUCTION LEADTIME: 16 Months

CONTRACT DATES: FY 2003: 10/02 FY 2004: 10/03 FY 2005: 10/04

DELIVERY DATE: FY 2003: 02/04 FY 2004: 02/05 FY 2005: 02/06

(\$ in Millions)

Cost:	Prior Years		FY 2003		FY 2004		FY 2005		FY 2006		FY 2007		FY 2008		FY 2009		To Complete		TOTAL		
	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	
FY 2002 & PY (62) kits **	56	79.1	4	11.6	2	**															
FY 2003 (5) kits ***			***	3.5	4	14.2	1	***													
FY 2004 (3) kits ****					****	3.3	3	12.6													
FY 2005 (1) kit																					
FY 2006 ( ) kits																					
FY 2007 ( ) kits																					
FY 2008 ( ) kits																					
FY 2009 ( ) kits																					
To Complete (73) kits																					
TOTAL	56	79.1	4	15.1	6	17.5	4	12.6													

\*\* FY 02 Congressional Add funds two (2) installs.

\*\*\* FY 03 Congressional Add funds one (1) install.

\*\*\*\* FY 04 Congressional Add funds one (1) install.

Installation Schedule

	FY 2002 & Prior	FY 2003				FY 2004				FY 2005				FY 2006				FY 2007				
		1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	
In	56		1	1	2		2	2	2		2	2										
Out	52	2	2	1	1	2		2	2	1	1	1	1									

	FY 2008				FY 2009				To Complete	TOTAL
	1	2	3	4	1	2	3	4		
In										
Out										

Exhibit P-3a	INDIVIDUAL MODIFICATION									
MODIFICATION TITLE: ADDITIONAL AIRCRAFT #1 (OSIP 34-99)										
MODELS OF SYSTEM AFFECTED: P-3 Special Projects	TYPE MODIFICATION: Investment									
DESCRIPTION/JUSTIFICATION:										
<p>This requirement is to provide an additional special project aircraft that can be used to maintain force structure while other mission aircraft are being replaced or upgraded.</p>										
DEVELOPMENT STATUS/MAJOR DEVELOPMENT MILESTONES:										
<p>The current inventory is four mission aircraft. Periods of maintenance and major modifications typically reduced inventory to three or less available for CINC's tasking. This additional fifth mission aircraft would allow for four aircraft to be available for CINC tasking at all times. Special Projects aircraft are directly tasked by JCS, operating as a Low-Density High-Demand asset under Global Military Force Policy. An additional special project mission aircraft was the number 2 priority of the FY99 Special Projects Operational Advisory Board.</p>										
FINANCIAL PLAN (TOA, \$ in Millions):										
	Prior Years	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	To Complete	TOTAL
	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$
RDT&E										
PROCUREMENT										
Installation Kits	1	3.5								1 3.5
Installation Kits N/R		3.1								3.1
Installation Equipment	1	21.6								1 21.6
Installation Equipment N/R										
Engineering Change Orders										
Data										
Training Equipment										
Support Equipment										
ILS										
Other Support		1.3								1.3
Interim Contractor Support										
Installation Cost	1	11.5								1 11.5
<b>TOTAL PROCUREMENT</b>	<b>2</b>	<b>41.0</b>								<b>2 41.0</b>
Notes:										
1. Totals do not add due to rounding										
2. Asterisk indicates amount less than 51K										

Exhibit P-3a

Exhibit P-3a

MODELS OF SYSTEMS AFFECTED DP-3 Special Projects MODIFICATION TITLE: Additional Aircraft #1

INSTALLATION INFORMATION:

METHOD OF IMPLEMENTATION: Depot Level Modification

ADMINISTRATIVE LEADTIME: 9 Months PRODUCTION LEADTIME: 6 Months

CONTRACT DATES: FY 2003:      FY 2004:      FY 2005:     

DELIVERY DATE: FY 2003:      FY 2004:      FY 2005:     

(\$ in Millions)

Cost:	Prior Years		FY 2003		FY 2004		FY 2005		FY 2006		FY 2007		FY 2008		FY 2009		To Complete		TOTAL		
	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	
FY 2002& PY (1) kits	1	11.5																		1	11.5
FY 2003 () kits																					
FY 2004 () kits																					
FY 2005 () kits																					
FY 2006 () kits																					
FY 2007 () kits																					
FY 2008 () kits																					
FY 2009 () kits																					
To Complete () kits																					
TOTAL	1	11.5																		1	11.5

Installation Schedule

	FY 2002	FY 2003				FY 2004				FY 2005				FY 2006				FY 2007				
	& PRIOR	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	
In	1																					
Out		1																				

	FY 2008				FY 2009				To Complete	TOTAL
	1	2	3	4	1	2	3	4		
In										1
Out										1

Exhibit P-3a	INDIVIDUAL MODIFICATION																																																																																																																																																																																																																																																																																																																																																																																			
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<p>The current inventory is four mission aircraft. Periods of maintenance and major modifications typically reduced inventory to three or less available for CINC's tasking. This additional sixth mission aircraft would allow for four aircraft to be available for CINC tasking at all times. Special Projects aircraft are directly tasked by JCS, operating as a Low-Density High-Demand asset under Global Military Force Policy. An additional special project mission aircraft was the number 2 priority of the FY99 Special Projects Operational Advisory Board.</p>																																																																																																																																																																																																																																																																																																																																																																																				
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Exhibit P-3a

Exhibit P-3a

MODELS OF SYSTEMS AFFECTED P-3 Special Projects MODIFICATION TITLE: Additional Aircraft #2

INSTALLATION INFORMATION:

METHOD OF IMPLEMENTATION: Depot Level Modification

ADMINISTRATIVE LEADTIME: 9 Months PRODUCTION LEADTIME: 9 Months

CONTRACT DATES: FY 2003: \_\_\_\_\_ FY 2004: \_\_\_\_\_ FY 2005: \_\_\_\_\_

DELIVERY DATE: FY 2003: \_\_\_\_\_ FY 2004: \_\_\_\_\_ FY 2005: \_\_\_\_\_

(\$ in Millions)

Cost:	Prior Years		FY 2003		FY 2004		FY 2005		FY 2006		FY 2007		FY 2008		FY 2009		To Complete		TOTAL		
	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	
FY 2002 & PY (1) kits	1	10.2																		1	10.2
FY 2003 () kits																					
FY 2004 () kits																					
FY 2005 () kits																					
FY 2006 () kits																					
FY 2007 () kits																					
FY 2008 () kits																					
FY 2009 () kits																					
To Complete () kits																					
TOTAL	1	10.2																		1	10.2

Installation Schedule

	FY 2002	FY 2003				FY 2004				FY 2005				FY 2006				FY 2007				
	& PRIOR	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	
In	1																					
Out					1																	

	FY 2008				FY 2009				To Complete	TOTAL
	1	2	3	4	1	2	3	4		
In										1
Out										1

Exhibit P-3a		INDIVIDUAL MODIFICATION																		
MODIFICATION TITLE Communications Navigation Surveillance/Air Traffic Management (OSIP 13-01)																				
MODELS OF SYSTEM AFFECTED: P-3C/EP-3										TYPE MODIFICATION Operational Improvement/Safety										
DESCRIPTION/JUSTIFICATION:																				
<p>P-3C aircraft have a requirement for a Communications, Navigation and Surveillance/ Air Traffic Management (CNS/ATM) upgrades to meet expanding CNS/ATM requirements and ensure global access to commercial airspace. The CNS/ATM requirements consist of various avionics systems upgrades/replacements which currently include; VHF radio with 8.33 kHz channel spacing and VHF data link (VDL), IFF (Mode S and Mode 5), protected ILS/VOR with FM Immunity, and an upgraded GPS to provide increased navigation accuracy (RNP5, BRNAV, RVSM). Successful integration of any or all of these capabilities, and any future Federal Aviation Administration (FAA) or International Civil Aviation Organization (ICAO) mandates, requires an Flight Management System (FMS) which provides for growth and interface flexibility. This OSIP provides non-recurring engineering for the development of the CNS/ATM architecture for the P-3 aircraft which includes a FMS/CDU, air data computer (ADC) and an Electronic Flight Display Systems (EFDS). This modification program provides CNS/ATM upgrades for 150 P-3C aircraft and 16 EP-3 aircraft. P-3C CNS/ATM Engineering Change Proposal (ECP) TBD: There is presently no specific ECP associated with the CNS/ATM architecture design and development.</p> <p>NOTE: CNO directed 150 P-3C aircraft in FY05.</p> <p>DEVELOPMENT STATUS/MAJOR DEVELOPMENT MILESTONES: The CNS/ATM architecture development in FY-01 and FY-02 is funded by Congressional Plus-ups. MMR procurement in FY-02 is funded by a Congressional Plus-up.</p> <p>FINANCIAL PLAN (TOA, \$ in Millions):</p>																				
	Prior Years		FY 2003		FY 2004		FY 2005		FY 2006		FY 2007		FY 2008		FY 2009		To Complete		TOTAL	
	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$
RDT&E																				
PROCUREMENT																				
Installation Kits																				
FMS/CDU	1	.2	1	.2	2	.1	18	1.1												
8.33kHz VHF Radio			10	*	18	*		****												
Digital ADC	1	*	1	*	2	*	18	.4												
MMR (P-ILS)	39	.2	21	.1	29	.2		****												
CXP (IFF/MODE S)	1	*	1	*	2	***		****												
EFDS **	66	.4	6	.4	18	1.2	18	1.5												
Installation Kits N/R			5.7		2.5															
Installation Equipment																				
FMS/CDU	3	.2	3	.2	6	.8	57	2.4												
8.33kHz VHF Radio			10	.5	18	.8		****												
Digital ADC	1	*	1	*	2	.1	19	.8												
MMR (P-ILS)	78	3.2	42	1.7	58	2.4		****												
CXP (IFF/MODE S)	1	*	1	.1	2	.1	***	****												
RINU-G (RNP 4/5)			2	*	4	.1	***	****												
EFDS **	66	.7	6	.8	18	2.4	20	2.7												
Installation Equipment N/R				6.6																
Engineering Change Orders																				
Data		*				.9		.5												
Training Equipment	2	**					8	1.3												
Support Equipment																				
ILS		.2		.5		.2		.3												
Other Support		2.7		2.2		1.1		1.5												
Interim Contractor Support																				
Installation Cost **	1	.2	1	.6		.4	2	1.5												
<b>TOTAL PROCUREMENT</b>	<b>259</b>	<b>13.7</b>	<b>105</b>	<b>16.3</b>	<b>179</b>	<b>10.8</b>	<b>158</b>	<b>14.1</b>												

Notes:  
 1. Totals do not add due to rounding  
 2. Asterisk indicates amount less than 51K  
 \*\* 60 EFDS funded under GPS OSIP 28-92  
 \*\*\* CXP and RINU-G funding in FY04 is for TKIs.  
 \*\*\*\* Beginning in FY-04, PMA-209 will fund NRE, Kits, equipment and installs for 8.33kHz VHF radio, CPX, MMR and RINU-G.

Exhibit P-3a

MODELS OF SYSTEMS AFFECTED: P-3C/EP-3/Derivatives MODIFICATION TITLE: CNS/ATM (OSIP 13-01) Architecture

INSTALLATION INFORMATION:

METHOD OF IMPLEMENTATION: Contractor Field Team

ADMINISTRATIVE LEADTIME: 9 Months PRODUCTION LEADTIME: 8 Months

CONTRACT DATES: FY 2003:        FY 2004: 6/04 FY 2005: 6/05

DELIVERY DATE: FY 2003:        FY 2004: 2/05 FY 2005: 2/06

(\$ in Millions)

Cost:	Prior Years		FY 2003		FY 2004		FY 2005		FY 2006		FY 2007		FY 2008		FY 2009		To Complete		TOTAL	
	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$
FY 2002 & PY (1) kits	**	.2	1	**																
FY 2003 (1) kits			***	.1	1	***														
FY 2004 (2) kits							2	.2												
FY 2005 (18) kits																				
FY 2006 (29) kits																				
FY 2007 (25) kits																				
FY 2008 (25) kits																				
FY 2009 (32) kits																				
To Complete (33) kits																				
<b>TOTAL</b>		.2	1	.1	1	***	2	.2												

P-3C Prototype NRE, prototype kit and prototype installation funded in FY02 with Congressional Plus-Up.

Block CNS/ATM Architecture installs begin in FY05 and consist of FMS/CDU, Digital Air Data Computer (ADC) and EFDS.

\*\* FY02 Congressional Add funds one (1) install

\*\* FY03 Congressional Add includes one (1) EP-3 install

Installation Schedule

	FY 2002	FY 2003				FY 2004				FY 2005				FY 2006				FY 2007			
	& PRIOR	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
In			1				1				1	1									
Out				1				1				1	1								

	FY 2008				FY 2009				To Complete	TOTAL
	1	2	3	4	1	2	3	4		
In										
Out										

Exhibit P-3a

MODELS OF SYSTEMS AFFECTED: P-3C/EP-3/Derivatives MODIFICATION TITLE: CNS/ATM (OSIP 13-01) Multimode Receivers (MMRs)

INSTALLATION INFORMATION:

METHOD OF IMPLEMENTATION: Contractor Field Team

ADMINISTRATIVE LEADTIME: 4 Months PRODUCTION LEADTIME: 8 Months

CONTRACT DATES: FY 2003: 05/03 FY 2004: 02/04 FY 2005:     

DELIVERY DATE: FY 2003: 01/04 FY 2004: 10/04 FY 2005:     

(\$ in Millions)

Cost:	Prior Years		FY 2003		FY 2004		FY 2005		FY 2006		FY 2007		FY 2008		FY 2009		To Complete		TOTAL	
	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$
FY 2002 & PY (39) kits	14	**	25	**															39	**
FY 2003 (21) kits			***	*	21	*													21	*
FY 2004 (29) kits					****	*	29	*											29	*
FY 2005 () kits																				
FY 2006 () kits																				
FY 2007 () kits																				
FY 2008 () kits																				
FY 2009 () kits																				
To Complete () kits																				
<b>TOTAL</b>	14	**	25	**	21	*	29	*											89	.1

NOTE: Will conduct stand-alone MMR installations in FY01-05 to meet immediate requirements. The remainder of MMRs will be procured and installed by PMA-209.

\* Asterisk indicates amount less than 51K

\*\* O-Level - Roll-On/Roll-Off, No Install Cost

\*\*\*\* FY03 Congressional Plus up funds 21 installs in FY04.

\*\*\*\* Includes the 14 FY04 Congressional Add.

Installation Schedule

	FY 2002 & PRIOR	FY 2003				FY 2004				FY 2005				FY 2006				FY 2007				
		1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	
In	14		12	13			10	11		7	7	7	8									
Out	14		12	13			10	11		7	7	7	8									

	FY 2008				FY 2009				To Complete	TOTAL
	1	2	3	4	1	2	3	4		
In										89
Out										89

Exhibit P-3a

MODELS OF SYSTEMS AFFECTED: P-3C/EP-3/Derivatives MODIFICATION TITLE: CNS/ATM (OSIP 13-01) Electronic Flight Display Systems (EFDS)

INSTALLATION INFORMATION:

METHOD OF IMPLEMENTATION: Contractor Field Team

ADMINISTRATIVE LEADTIME: 9 Months PRODUCTION LEADTIME: 8 Months

CONTRACT DATES: FY 2003: 6/03 FY 2004: 6/04 FY 2005: 6/05

DELIVERY DATE: FY 2003: 2/04 FY 2004: 2/05 FY 2005: 2/06

(\$ in Millions)

Cost:	Prior Years		FY 2003		FY 2004		FY 2005		FY 2006		FY 2007		FY 2008		FY 2009		To Complete		TOTAL		
	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	
FY 2002 & PY (66) kits	60	*	6	.5																	
FY 2003 (6) kits			**	.1	6	.4															
FY 2004 (18) kits							18	1.3													
FY 2005 (18) kits																					
FY 2006 (29) kits																					
FY 2007 (25) kits																					
FY 2008 (4) kits																					
FY 2009 () kits																					
To Complete () kits																					
<b>TOTAL</b>	<b>60</b>	<b>*</b>	<b>6</b>	<b>.6</b>	<b>6</b>	<b>.4</b>	<b>18</b>	<b>1.3</b>													

Note: Will conduct stand-alone EFDS installations in FY01-05 to meet immediate requirements. EFDS will be installed concurrent with CNS/ATM Architecture installs beginning in FY05.

\* Prior year EFDS funded under GPS OSIP 29-92

\*\* FY-03 Congressional Add includes one EP-3 EFDS installation.

Installation Schedule

	FY 2002 & PRIOR	FY 2003				FY 2004				FY 2005				FY 2006				FY 2007				
		1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	
In	60		2	2	2	1	1	2	2	4	4	5	5									
Out	60			2	2	2	1	1	2	2	4	4	5									

	FY 2008				FY 2009				To Complete	TOTAL
	1	2	3	4	1	2	3	4		
In										
Out										

Exhibit P-3a INDIVIDUAL MODIFICATION

MODIFICATION TITLE: P-3 Critical Obsolescence Program (OSIP 04-04)

MODELS OF SYSTEM AFFECTED: P-3C TYPE MODIFICATION: Readiness Improvement

DESCRIPTION/JUSTIFICATION:

The purpose of this program is to incorporate a number of cost effective changes to the P-3 weapon system, specifically targeting improvements to high cost and maintenance and obsolete readiness degrader items. These improvements are a vital element of the P-3 sustainment bridge, significantly enhancing the strategy of a smaller, more ready, more capable P-3 force during the bridge to Multi-Mission Maritime Aircraft (MMA). The increased readiness and capabilities that will be realized, support the foundational sustainment bridge elements, specifically operational availability and common configuration. Planned improvements under this OSIP cover airframe, propulsion and avionics related subsystems, utilizing Commercial Off-The-Shelf Systems (COTS) technology to the maximum extent practicable to minimize development and procurement costs, and to reduce the time to field the improved systems.

FY04 Congressional Plus-Up of \$2.0M for Electro-Optics and Communications Upgrade.

DEVELOPMENT STATUS/MAJOR DEVELOPMENT MILESTONES:

This Modification makes maximum use of Commercial Off-The-Shelf Systems that have been installed on operational platforms.

FINANCIAL PLAN (TOA, \$ in Millions):

	Prior Years		FY 2003		FY 2004		FY 2005		FY 2006		FY 2007		FY 2008		FY 2009		To Complete		TOTAL		
	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	
RDT&E (H1152)						4.5		5.5													
PROCUREMENT																					
Installation Kits																					
HF Radio Kit					3	.1	8	.1													
Data Link Kit					3	.1	8	.1													
Infrared Detection Kit					3	.1	9	.1													
Auto-Pilot Kit					3	.1	9	.2													
Inter Communications Kit					3	.1	8	.1													
Installation Kits N/R						.5		.5													
Installation Equipment																					
HF Radio Kit					3	.8	8	2.1													
Data Link Kit					3	.2	8	.6													
Infrared Detection Kit					3	1.5	9	4.5													
Auto-Pilot Kit					3	.9	9	2.2													
Inter Communications Kit					3	1.2	8	3.1													
Installation Equipment N/R						6.8		.8													
Engineering Change Orders																					
Data						.2		.4													
Training Equipment						1.7		.8													
Support Equipment						.5		.6													
ILS						.2		.4													
Other Support						1.1		2.0													
Interim Contractor Support																					
Installation Cost								15	1.5												
<b>TOTAL PROCUREMENT</b>						30	15.9	84	19.9												

Notes:

1. Totals do not add due to rounding
2. Asterisk indicates amount less than 51K

Exhibit P-3a

MODELS OF SYSTEMS AFFECTED: P-3C MODIFICATION TITLE: P-3 Critical Obsolescence Program (OSIP 04-04, HF Radio)

INSTALLATION INFORMATION:

METHOD OF IMPLEMENTATION: Installation will be accomplished by contractor mod teams.

ADMINISTRATIVE LEADTIME: 3 Months PRODUCTION LEADTIME: 12 Months

CONTRACT DATES: FY 2003: \_\_\_\_\_ FY 2004: 01/04 FY 2005: 01/05

DELIVERY DATE: FY 2003: \_\_\_\_\_ FY 2004: 01/05 FY 2005: 01/06

(\$ in Millions)

Cost:	Prior years		FY 2003		FY 2004		FY 2005		FY 2006		FY 2007		FY 2008		FY 2009		To Complete		TOTAL		
	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	
FY 2002 & PY () kits																					
FY 2003 () kits																					
FY 2004 (3) kits							3	.1													
FY 2005 (8) kits																					
FY 2006 (30) kits																					
FY 2007 (30) kits																					
FY 2008 (25) kits																					
FY 2009 (33) kits																					
To Complete (21) kits																					
TOTAL							3	.1													

Installation Schedule

	FY 2002 & Prior	FY 2003				FY 2004				FY 2005				FY 2006				FY 2007				
		1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	
In												3										
Out												3										

	FY 2008				FY 2009				To Complete	TOTAL
	1	2	3	4	1	2	3	4		
In										
Out										

Exhibit P-3a

MODELS OF SYSTEMS AFFECTED: P-3C MODIFICATION TITLE: P-3 Critical Obsolescence Program (OSIP 04-04 Data Link

INSTALLATION INFORMATION:

METHOD OF IMPLEMENTATION: Installation will be accomplished by contractor mod teams.

ADMINISTRATIVE LEADTIME: 3 Months PRODUCTION LEADTIME: 12 Months

CONTRACT DATES: FY 2003: \_\_\_\_\_ FY 2004: 01/04 FY 2005: 01/05

DELIVERY DATE: FY 2003: \_\_\_\_\_ FY 2004: 01/05 FY 2005: 01/06

(\$ in Millions)

Cost:	Prior years		FY 2003		FY 2004		FY 2005		FY 2006		FY 2007		FY 2008		FY 2009		To Complete		TOTAL		
	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	
FY 2002 & PY () kits																					
FY 2003 () kits																					
FY 2004 (3) kits							3	.1													
FY 2005 (8) kits																					
FY 2006 (30) kits																					
FY 2007 (30) kits																					
FY 2008 (25) kits																					
FY 2009 (33) kits																					
To Complete (21) kits																					
TOTAL							3	.1													

Installation Schedule

	FY 2002 & Prior	FY 2003				FY 2004				FY 2005				FY 2006				FY 2007			
		1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
In											3										
Out												3									

	FY 2008				FY 2009				To Complete	TOTAL
	1	2	3	4	1	2	3	4		
In										
Out										

Exhibit P-3a

MODELS OF SYSTEMS AFFECTED: P-3C MODIFICATION TITLE: P-3 Critical Obsolescence Program (OSIP 04-04; Infrared Detection)

INSTALLATION INFORMATION:

METHOD OF IMPLEMENTATION: Installation will be accomplished by contractor mod teams.

ADMINISTRATIVE LEADTIME: 3 Months PRODUCTION LEADTIME: 12 Months

CONTRACT DATES: FY 2003: \_\_\_\_\_ FY 2004: 01/04 FY 2005: 01/05

DELIVERY DATE: FY 2003: \_\_\_\_\_ FY 2004: 01/05 FY 2005: 01/06

(\$ in Millions)

Cost:	Prior years		FY 2003		FY 2004		FY 2005		FY 2006		FY 2007		FY 2008		FY 2009		To Complete		TOTAL		
	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	
FY 2002 & PY () kits																					
FY 2003 () kits																					
FY 2004 (3) kits							3	.1													
FY 2005 (9) kits																					
FY 2006 (19) kits																					
FY 2007 (18) kits																					
FY 2008 (17) kits																					
FY 2009 () kits																					
To Complete () kits																					
<b>TOTAL</b>							3	.1													

Installation Schedule

	FY 2002 & Prior	FY 2003				FY 2004				FY 2005				FY 2006				FY 2007			
		1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
In											3										
Out											3										

	FY 2008				FY 2009				To Complete	TOTAL
	1	2	3	4	1	2	3	4		
In										
Out										

Exhibit P-3a

MODELS OF SYSTEMS AFFECTED: P-3C MODIFICATION TITLE: P-3 Critical Obsolescence Program (OSIP 04-04; Auto-Pilot)

INSTALLATION INFORMATION: \_\_\_\_\_

METHOD OF IMPLEMENTATION: Installation will be accomplished by contractor mod teams.

ADMINISTRATIVE LEADTIME: 3 Months PRODUCTION LEADTIME: 12 Months

CONTRACT DATES: FY 2003: \_\_\_\_\_ FY 2004: 01/04 FY 2005: 01/05

DELIVERY DATE: FY 2003: \_\_\_\_\_ FY 2004: 01/05 FY 2005: 01/06

(\$ in Millions)

Cost:	Prior years		FY 2003		FY 2004		FY 2005		FY 2006		FY 2007		FY 2008		FY 2009		To Complete		TOTAL		
	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	
FY 2002 & PY () kits																					
FY 2003 () kits																					
FY 2004 (3) kits							3	.1													
FY 2005 (9) kits																					
FY 2006 (29) kits																					
FY 2007 (29) kits																					
FY 2008 (24) kits																					
FY 2009 (35) kits																					
To Complete (21) kits																					
TOTAL							3	.1													

Installation Schedule

	FY 2002 & Prior	FY 2003				FY 2004				FY 2005				FY 2006				FY 2007			
		1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
In											3										
Out											3										

	FY 2008				FY 2009				To Complete	TOTAL
	1	2	3	4	1	2	3	4		
In										
Out										

Exhibit P-3a

MODELS OF SYSTEMS AFFECTED: P-3C MODIFICATION TITLE: P-3 Critical Obsolescence Program (OSIP 04-04, Inter Communications System)

INSTALLATION INFORMATION:

METHOD OF IMPLEMENTATION: Installation will be accomplished by contractor mod teams.

ADMINISTRATIVE LEADTIME: 6 Months PRODUCTION LEADTIME: 12 Months

CONTRACT DATES: FY 2003: \_\_\_\_\_ FY 2004: 04/04 FY 2005: 01/05

DELIVERY DATE: FY 2003: \_\_\_\_\_ FY 2004: 01/05 FY 2005: 01/06

(\$ in Millions)

Cost:	Prior years		FY 2003		FY 2004		FY 2005		FY 2006		FY 2007		FY 2008		FY 2009		To Complete		TOTAL		
	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	
FY 2002 & PY () kits																					
FY 2003 () kits																					
FY 2004 (3) kits							3	1.2													
FY 2005 (8) kits																					
FY 2006 (19) kits																					
FY 2007 (18) kits																					
FY 2008 (18) kits																					
FY 2009 () kits																					
To Complete () kits																					
TOTAL							3	1.2													

Installation Schedule

	FY 2002 & Prior	FY 2003				FY 2004				FY 2005				FY 2006				FY 2007			
		1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
In											3										
Out											3										

	FY 2008				FY 2009				To Complete	TOTAL
	1	2	3	4	1	2	3	4		
In										
Out										

Exhibit P-3a	INDIVIDUAL MODIFICATION																																																																																																																																																																																																																																																																																																																																																																																																												
MODIFICATION TITLE: <u>P-3/EP-3 Special Structural Inspection - Kits (SSI-K) (OSIP 05-05)</u>																																																																																																																																																																																																																																																																																																																																																																																																													
MODELS OF SYSTEM AFFECTED: <u>All P-3 T/M/S</u>	TYPE MODIFICATION: <u>Sustainment</u>																																																																																																																																																																																																																																																																																																																																																																																																												
DESCRIPTION/JUSTIFICATION:																																																																																																																																																																																																																																																																																																																																																																																																													
<p>The Special Structural Inspection - Kits Program is an OSIP which will capture the P-3C aircraft's test demonstrated fatigue life by preemptively replacing airframe components identified as having impact on future aircraft availability due to safety, structural performance, and component unsupportability. This will allow full realization of the aircraft's designed service life but will not extend the fatigue life of those aircraft. Unchecked, these problem areas collectively will result in significant loss of aircraft from the operational inventory due to operational and support funding limitations. To ensure future aircraft safety and supportability, this procurement investment includes a number of cost effective modifications to a number of systems, which are around the principle degraders on the aircraft.</p>																																																																																																																																																																																																																																																																																																																																																																																																													
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	<table border="1" style="width: 100%; border-collapse: collapse; text-align: center;"> <thead> <tr> <th rowspan="2"></th> <th colspan="2">Prior Years</th> <th colspan="2">FY 2003</th> <th colspan="2">FY 2004</th> <th colspan="2">FY 2005</th> <th colspan="2">FY 2006</th> <th colspan="2">FY 2007</th> <th colspan="2">FY 2008</th> <th colspan="2">FY 2009</th> <th colspan="2">To Complete</th> <th colspan="2">TOTAL</th> </tr> <tr> <th>Qty</th> <th>\$</th> </tr> </thead> <tbody> <tr> <td>RDT&amp;E</td> <td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td> </tr> <tr> <td>PROCUREMENT</td> <td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td> </tr> <tr> <td>  Installation Kits</td> <td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td> </tr> <tr> <td>    SSIK Kit</td> <td></td><td></td><td></td><td></td><td></td><td></td><td>11</td><td>5.5</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td> </tr> <tr> <td>    Installation Kits N/R</td> <td></td><td></td><td></td><td></td><td></td><td></td><td></td><td>1.0</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td> </tr> <tr> <td>  Installation Equipment</td> <td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td> </tr> <tr> <td>    SSIK Kit</td> <td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td> </tr> <tr> <td>    Installation Equipment N/R</td> <td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td> </tr> <tr> <td>  Engineering Change Orders</td> <td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td> </tr> <tr> <td>  Data</td> <td></td><td></td><td></td><td></td><td></td><td></td><td></td><td>.4</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td> </tr> <tr> <td>  Training Equipment</td> <td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td> </tr> <tr> <td>  Support Equipment</td> <td></td><td></td><td></td><td></td><td></td><td></td><td></td><td>.5</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td> </tr> <tr> <td>  ILS</td> <td></td><td></td><td></td><td></td><td></td><td></td><td></td><td>.5</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td> </tr> <tr> <td>  Other Support</td> <td></td><td></td><td></td><td></td><td></td><td></td><td></td><td>2.1</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td> </tr> <tr> <td>  Interim Contractor Support</td> <td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td> </tr> <tr> <td>  Installation Cost</td> <td></td><td></td><td></td><td></td><td></td><td></td><td>4</td><td>8.0</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td> </tr> <tr> <td><b>TOTAL PROCUREMENT</b></td> <td></td><td></td><td></td><td></td><td></td><td></td><td><b>11</b></td><td><b>18.1</b></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td> </tr> </tbody> </table>		Prior Years		FY 2003		FY 2004		FY 2005		FY 2006		FY 2007		FY 2008		FY 2009		To Complete		TOTAL		Qty	\$	RDT&E																					PROCUREMENT																					Installation Kits																					SSIK Kit							11	5.5													Installation Kits N/R								1.0													Installation 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	Prior Years		FY 2003		FY 2004		FY 2005		FY 2006		FY 2007		FY 2008		FY 2009		To Complete		TOTAL																																																																																																																																																																																																																																																																																																																																																																																										
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2. Asterisk indicates amount less than 51K																																																																																																																																																																																																																																																																																																																																																																																																													

Exhibit P-3a

MODELS OF SYSTEMS AFFECTED: All P-3 T/M/S MODIFICATION TITLE: P-3/EP-3 Special Structural Inspection - Kits (SSI-K) (OSIP 05-05)

INSTALLATION INFORMATION:

METHOD OF IMPLEMENTATION: Installation will be accomplished by contractor mod teams.

ADMINISTRATIVE LEADTIME: 3 Months PRODUCTION LEADTIME: 8 Months

CONTRACT DATES: FY 2003: \_\_\_\_\_ FY 2004: \_\_\_\_\_ FY 2005: 11/04

DELIVERY DATE: FY 2003: \_\_\_\_\_ FY 2004: \_\_\_\_\_ FY 2005: 06/05

(\$ in Millions)

Cost:	Prior years		FY 2003		FY 2004		FY 2005		FY 2006		FY 2007		FY 2008		FY 2009		To Complete		TOTAL		
	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	
FY 2002 & PY () kits																					
FY 2003 () kits																					
FY 2004 () kits																					
FY 2005 (11) kits							4	8.0	7	14.7											
FY 2006 (13) kits									4	8.4											
FY 2007 (13) kits																					
FY 2008 (12) kits																					
FY 2009 (5) kits																					
To Complete (49) kits																					
TOTAL							4	8.0	11	23.1											

Installation Schedule

	FY 2002 & Prior	FY 2003				FY 2004				FY 2005				FY 2006				FY 2007				
		1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	
In												4										
Out													4									

	FY 2008				FY 2009				To Complete	TOTAL
	1	2	3	4	1	2	3	4		
In										
Out										

CLASSIFICATION:

UNCLASSIFIED

BUDGET ITEM JUSTIFICATION SHEET P-40				DATE: February 2004																																																																																											
APPROPRIATION/BUDGET ACTIVITY Aircraft Procurement, Navy/APN-5 Aircraft Modifications				P-1 ITEM NOMENCLATURE S-3 Series Modifications																																																																																											
Program Element for Code B Items:				Other Related Program Elements																																																																																											
	Prior Years	ID Code	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	To Complete	Total																																																																																				
<p>QUANTITY</p> <p>COST</p> <p>(In Millions)</p>																																																																																															
	375.8		29.6	8.3	1.9	0.8	0.8	0.5	0.0	0.0	417.6																																																																																				
<p>This line item funds modifications to S-3 aircraft. The S-3B is a carrier based, all weather, high wing, high subsonic, twin engine, multi-mission aircraft capable of Anti-Surface Warfare (ASUW) operations and tanking. The overall goal of the modifications budgeted in FY2005 is to continue the UHF/VHF communications improvement and the Co-Processor Memory Unit efforts; and to upgrade critical avionics, and critical structures within the aircraft. Total Active Inventory (TAI) is 111. The S-3B will reach end of service in 2015. The specific modifications budgeted and programmed are:</p>																																																																																															
<p>(TOA, \$ in Millions)</p> <table style="width:100%; border-collapse: collapse;"> <thead> <tr> <th style="text-align: left;"><u>QSIP No.</u></th> <th style="text-align: left;"><u>Description</u></th> <th style="text-align: center;"><u>Prior Years</u></th> <th style="text-align: center;"><u>FY 2003</u></th> <th style="text-align: center;"><u>FY 2004</u></th> <th style="text-align: center;"><u>FY 2005</u></th> <th style="text-align: center;"><u>FY 2006</u></th> <th style="text-align: center;"><u>FY 2007</u></th> <th style="text-align: center;"><u>FY 2008</u></th> <th style="text-align: center;"><u>FY 2009</u></th> <th style="text-align: center;"><u>To Complete</u></th> <th style="text-align: center;"><u>Total</u></th> </tr> </thead> <tbody> <tr> <td>39-94</td> <td>UHF/VHF Comm. Impr. Prog.</td> <td style="text-align: center;">85.1</td> <td style="text-align: center;">19.0</td> <td style="text-align: center;">7.7</td> <td style="text-align: center;">1.9</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td style="text-align: center;">113.6</td> </tr> <tr> <td>12-95</td> <td>Critical Structures</td> <td style="text-align: center;">50.1</td> <td style="text-align: center;">2.5</td> <td style="text-align: center;">0.5</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td style="text-align: center;">53.1</td> </tr> <tr> <td>20-95</td> <td>Critical Avionics Upgrade</td> <td style="text-align: center;">192.8</td> <td style="text-align: center;">5.6</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td style="text-align: center;">198.4</td> </tr> <tr> <td>4-96</td> <td>Co-Processor Memory Unit</td> <td style="text-align: center;">47.8</td> <td style="text-align: center;">2.5</td> <td style="text-align: center;">0.1</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td style="text-align: center;">50.5</td> </tr> <tr> <td>XX-06</td> <td>Flight Critical Systems Sustainment</td> <td></td> <td></td> <td></td> <td></td> <td style="text-align: center;">0.8</td> <td style="text-align: center;">0.8</td> <td style="text-align: center;">0.5</td> <td></td> <td></td> <td style="text-align: center;">2.0</td> </tr> <tr> <td>TOTAL</td> <td></td> <td style="text-align: center;">375.8</td> <td style="text-align: center;">29.6</td> <td style="text-align: center;">8.3</td> <td style="text-align: center;">1.9</td> <td style="text-align: center;">0.8</td> <td style="text-align: center;">0.8</td> <td style="text-align: center;">0.5</td> <td></td> <td></td> <td style="text-align: center;">417.6</td> </tr> </tbody> </table>												<u>QSIP No.</u>	<u>Description</u>	<u>Prior Years</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>	<u>FY 2008</u>	<u>FY 2009</u>	<u>To Complete</u>	<u>Total</u>	39-94	UHF/VHF Comm. Impr. Prog.	85.1	19.0	7.7	1.9						113.6	12-95	Critical Structures	50.1	2.5	0.5							53.1	20-95	Critical Avionics Upgrade	192.8	5.6								198.4	4-96	Co-Processor Memory Unit	47.8	2.5	0.1							50.5	XX-06	Flight Critical Systems Sustainment					0.8	0.8	0.5			2.0	TOTAL		375.8	29.6	8.3	1.9	0.8	0.8	0.5			417.6
<u>QSIP No.</u>	<u>Description</u>	<u>Prior Years</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>	<u>FY 2008</u>	<u>FY 2009</u>	<u>To Complete</u>	<u>Total</u>																																																																																				
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<p>Totals may vary due to rounding</p>																																																																																															

CLASSIFICATION:

DD Form 2454, JUN 86

UNCLASSIFIED

Exhibit P-3a		INDIVIDUAL MODIFICATION																		
MODIFICATION TITLE: Ultra High Frequency (UHF) / Very High Frequency (VHF) Communications Improvement Program (CIP) (OSIP 39-94)																				
MODELS OF SYSTEM AFFECTED: <u>S-3B</u>		TYPE MODIFICATION <u>Operational Improvement</u>																		
DESCRIPTION/JUSTIFICATION: The S-3B has an operational requirement for reliable UHF and VHF communications. The current UHF radio (AN/ARC-156) suffers from serious reliability and obsolescence problems, and lacks the internal intermodulation protection required for proper operation in today's operational environment. The AN/ARC-187 UHF radio to be installed is a derivative of the AN/ARC-164 which is presently utilized by the Air Force and would correct the above mentioned deficiencies. The installation also permits compatibility with the JCS requirements for UHF Satellite Communications (SATCOM) users. The radio is common with the P-3C aircraft and this commonality will significantly reduce logistic support requirements. The S-3B does not currently have a VHF radio, which is required by International Air Traffic Control regulations and represents a potential safety flight problem when operating in international airspace and with foreign air fields. The AN/ARC-182 is the Navy's standard VHF radio for tactical aircraft and provides the VHF capability required. One AN/ARC-182 radio will be installed in 84 S-3B aircraft. This modification is validated in ORD 393-88-95, approved 23 Mar 95. S-3B ECP#423 constitutes the CIP integration, and Communication Control Group (CCG) modification.																				
DEVELOPMENT STATUS/MAJOR DEVELOPMENT MILESTONES: The AN/ARC-182 has Approval for Full Production (AFP), and will be verified in the S-3B with trial kit installation (TKI). The AN/ARC-187 installation was verified in the S-3B with Trial Kit Installation. Milestone III Approval for Full Production for S-3B Communications Improvement Program was granted on 23 June 1995.																				
FINANCIAL PLAN (TOA, \$ in Millions):																				
	Prior Years		FY 2003		FY 2004		FY 2005		FY 2006		FY 2007		FY 2008		FY 2009		To Complete		TOTAL	
	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$
RDT&E																				
PROCUREMENT																				
Installation Kits																				
PROTOTYPE/TKI	2	1.8																	2	1.8
CIP A Kit	61	15.5	16	3.3	5	1.2													82	19.9
MD-1324 Modem Control Mod Kit																				
Installation Kits N/R		11.4																		11.4
Installation Equipment																				
ARC-182 - R/T & Mount	62	*	19	*	5	*													86	*
MD-1324 Modem	62	1.9	19	.6	5	.2													86	2.7
MD-1324 Modem Control		*				*														
Crypto Fill Panels (2 per A/C)	124	.1	38	*	10	*													172	.2
CCG Modification	68	17.3	19	4.3	5	1.3													92	22.8
AS-3557 Antenna	62	.2	19	.1	5	*													86	.3
Diplexer Preamp	62	.4	19	.1	5	*													86	.5
ARC-187 - B Kit (2 per A/C)	124	10.3	38	2.9	10	.7													172	13.9
Installation Equipment N/R		1.4																		1.5
Engineering Change Orders																				
Data		1.9		.5																2.4
Training Equipment	8	4.4																	8	4.4
Support Equipment		1.5																		1.5
ILS		1.9		.5		.4		.1												2.9
Other Support		11.1		3.4		1.1		.3												15.9
Interim Contractor Support																				
Installation Cost	36	4.0	25	3.1	19	2.7	12	1.4											92	11.3
TOTAL PROCUREMENT	635	85.1	187	19.0	50	7.7	19	1.9											872	113.6

Notes:  
 1. Totals do not add due to rounding  
 2. Asterisk indicates amount less than 51K      \*\* AN/ARC-182 radios to be obtained from F/A-18 or other aircraft installing AN/ARC-210 radios.

Exhibit P-3a

MODELS OF SYSTEMS AFFECTED: S-3B MODIFICATION TITLE: UHF/VHF Communications Improvement Program (OSIP 39-94)

INSTALLATION INFORMATION:

METHOD OF IMPLEMENTATION: Contractor Field Team

ADMINISTRATIVE LEADTIME: 6 Months PRODUCTION LEADTIME: 12 Months

CONTRACT DATES: FY 2003: 3/03 FY 2004: 3/04 FY 2005:     

DELIVERY DATE: FY 2003: 3/04 FY 2004: 3/05 FY 2005:     

(\$ in Millions)

Cost:	Prior Years		FY 2003		FY 2004		FY 2005		FY 2006		FY 2007		FY 2008		FY 2009		To Complete		TOTAL		
	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	
FY 2002 & PY (71) kits	36	4.0	25	3.1	10	1.4														71	8.6
FY 2003 (16) kits					9	1.3	7	.8												16	2.1
FY 2004 (5) kits							5	.6												5	.6
FY 2005 () kits																					
FY 2006 () kits																					
FY 2007 () kits																					
FY 2008 () kits																					
FY 2009 () kits																					
To Complete () kits																					
TOTAL **	36	4.0	25	3.1	19	2.7	12	1.4												92	11.3

\*\* Includes trainer install(s).

Installation Schedule

	FY 2002	FY 2003				FY 2004				FY 2005				FY 2006				FY 2007			
	& Prior	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
In	36		9	9	7		6	6	7		4	4	4								
Out	36		9	9	7		6	6	7		4	4	4								

	FY 2008				FY 2009				To Complete	TOTAL
	1	2	3	4	1	2	3	4		
In										92
Out										92



Exhibit P-3a

MODELS OF SYSTEMS AFFECT S-3B MODIFICATION TITLE: Critical Structures (OSIP 12-95)  
Inner Wing - BL144 (AFC-285)

INSTALLATION INFORMATION:

METHOD OF IMPLEMENTATION NADEP/Contractor Field Mod Teams

ADMINISTRATIVE LEADTIME: 4 Months PRODUCTION LEADTIME: 9 Months

CONTRACT DATES: FY 2003:      FY 2004:      FY 2005:     

DELIVERY DATE: FY 2003:      FY 2004:      FY 2005:     

(\$ in Millions)

Cost:	Prior Years		FY 2003		FY 2004		FY 2005		FY 2006		FY 2007		FY 2008		FY 2009		TC		TOTAL		
	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	
FY 2002 & PY (108) kits	97	2.2	3	0.5	8	*														108	2.7
FY 2003 () kits																					
FY 2004 () kits																					
FY 2005 () kits																					
FY 2006 () kits																					
FY 2007 () kits																					
FY 2008 () kits																					
FY 2009 () kits																					
To Complete () kits																					
<b>TOTAL</b>	<b>97</b>	<b>2.2</b>	<b>3</b>	<b>.5</b>	<b>8</b>	<b>*</b>														<b>108</b>	<b>2.7</b>

\*FY03 funds installs in FY04.

Commander, Sea Control Wing Pacific (CSCWP) planned to install BL-144 (AFC-285) during IMC Inspections. The war created non-availability of aircraft for FY-03 installations, therefore moving 8 installations to FY04.

Installation Schedule

	FY 2002 & Prior	FY 2003				FY 2004				FY 2005				FY 2006				FY 2007				
		1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	
In	97		1		2	2	2	2	2													
Out	85	12	1		2	2	2	2	2													

	FY 2008				FY 2009				To Complete	TOTAL
	1	2	3	4	1	2	3	4		
In										108
Out										108

Exhibit P-3a

MODELS OF SYSTEMS AFFECTED: S-3B MODIFICATION TITLE: Critical Structures (OSIP 12-95)  
Inner Wing - BL71

INSTALLATION INFORMATION:

METHOD OF IMPLEMENTATION: NADEP Field Mod Team

ADMINISTRATIVE LEADTIME: 1 Months PRODUCTION LEADTIME: 2 Months

CONTRACT DATES: FY 2003: \_\_\_\_\_ FY 2004: \_\_\_\_\_ FY 2005: \_\_\_\_\_

DELIVERY DATE: FY 2003: \_\_\_\_\_ FY 2004: \_\_\_\_\_ FY 2005: \_\_\_\_\_

(\$ in Millions)

Cost:	Prior Years		FY 2003		FY 2004		FY 2005		FY 2006		FY 2007		FY 2008		FY 2009		TC		TOTAL		
	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	
FY 2002 & PY (112) kits	112	.5																		112	.5
FY 2003 () kits																					
FY 2004 () kits																					
FY 2005 () kits																					
FY 2006 () kits																					
FY 2007 () kits																					
FY 2008 () kits																					
FY 2009 () kits																					
To Complete () kits																					
TOTAL	112	.5																		112	.5

Installation Schedule

	FY 2002 & Prior	FY 2003				FY 2004				FY 2005				FY 2006				FY 2007			
		1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
In	112																				
Out	112																				

	FY 2008				FY 2009				To Complete	TOTAL
	1	2	3	4	1	2	3	4		
In										112
Out										112

Exhibit P-3a

MODELS OF SYSTEMS AFFECTED S-3B

MODIFICATION TITLE: Critical Structures (OSIP 12-95)  
Flight Control Elements

INSTALLATION INFORMATION:

METHOD OF IMPLEMENTATION: NADEP Field Mod Team

ADMINISTRATIVE LEADTIME: 4 Months

PRODUCTION LEADTIME: 9 Months

CONTRACT DATES: FY 2003: \_\_\_\_\_ FY 2004: \_\_\_\_\_ FY 2005: \_\_\_\_\_

DELIVERY DATE: FY 2003: \_\_\_\_\_ FY 2004: \_\_\_\_\_ FY 2005: \_\_\_\_\_

(\$ in Millions)

Cost:	Prior Years		FY 2003		FY 2004		FY 2005		FY 2006		FY 2007		FY 2008		FY 2009		TC		TOTAL	
	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$
FY 2002 & PY (111) kits	111	6.3																	111	6.3
FY 2003 () kits																				
FY 2004 () kits																				
FY 2005 () kits																				
FY 2006 () kits																				
FY 2007 () kits																				
FY 2008 () kits																				
FY 2009 () kits																				
To Complete () kits																				
<b>TOTAL</b>	<b>111</b>	<b>6.3</b>																	<b>111</b>	<b>6.3</b>

Installation Schedule

	FY 200 & Prior	FY 2003				FY 2004				FY 2005				FY 2006				FY 2007			
		1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
In	111																				
Out	107	4																			

	FY 2008				FY 2009				To Complete	TOTAL
	1	2	3	4	1	2	3	4		
In										111
Out										111

Exhibit P-3a

MODELS OF SYSTEMS AFFECTED: S-3B

MODIFICATION TITLE: Critical Structures (OSIP 12-95)  
Critical Structures Airframe Kit

INSTALLATION INFORMATION:

METHOD OF IMPLEMENTATION: Contractor Field Mod Team

ADMINISTRATIVE LEADTIME: 4 Months

PRODUCTION LEADTIME: 9 Months

CONTRACT DATES: FY 2003: \_\_\_\_\_ FY 2004: \_\_\_\_\_ FY 2005: \_\_\_\_\_

DELIVERY DATE: FY 2003: \_\_\_\_\_ FY 2004: \_\_\_\_\_ FY 2005: \_\_\_\_\_

(\$ in Millions)

Cost:	Prior Years		FY 2003		FY 2004		FY 2005		FY 2006		FY 2007		FY 2008		FY 2009		To Complete		TOTAL		
	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	
FY 2002 & PY (111) kits	111	6.3																		111	6.3
FY 2003 () kits																					
FY 2004 () kits																					
FY 2005 () kits																					
FY 2006 () kits																					
FY 2007 () kits																					
FY 2008 () kits																					
FY 2009 () kits																					
To Complete () kits																					
<b>TOTAL</b>	<b>111</b>	<b>6.3</b>																		<b>111</b>	<b>6.3</b>

Installation Schedule

	FY 2002 & Prior	FY 2003				FY 2004				FY 2005				FY 2006				FY 2007				
		1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	
In	111																					
Out	107	4																				

	FY 2008				FY 2009				To Complete	TOTAL
	1	2	3	4	1	2	3	4		
In										111
Out										111

Exhibit P-3a

MODELS OF SYSTEMS AFFECTED: S-3B MODIFICATION TITLE: Critical Structures (OSIP 12-95)  
Inner Wing - BL 58/70 (AFC-292)

INSTALLATION INFORMATION:

METHOD OF IMPLEMENTATION: NADEP Field Mod Team/MIP

ADMINISTRATIVE LEADTIME: \_\_\_\_\_ Months PRODUCTION LEADTIME: \_\_\_\_\_ Months

CONTRACT DATES: FY 2003: \_\_\_\_\_ FY 2004: \_\_\_\_\_ FY 2005: \_\_\_\_\_

DELIVERY DATE: FY 2003: \_\_\_\_\_ FY 2004: \_\_\_\_\_ FY 2005: \_\_\_\_\_

(\$ in Millions)

Cost:	Prior Years		FY 2003		FY 2004		FY 2005		FY 2006		FY 2007		FY 2008		FY 2009		To Complete		TOTAL	
	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$
FY 2002 & PY () kits *	49	.8																	49	.8
FY 2003 () kits *			42	1.0															57	1.0
FY 2004 () kits *					15	**													15	**
FY 2005 () kits																				
FY 2006 () kits																				
FY 2007 () kits																				
FY 2008 () kits																				
FY 2009 () kits																				
To Complete () kits																				
<b>TOTAL</b>	49	.8	42	1.0	15	**													106	1.8

\* No A kits required. B kits provided by supply system.  
 \*\*FY03 funds installs in FY04.

Commander, Sea Control Wing Pacific (CSCWP) planned to install BL-58/70 (AFC-292) during IMC Inspections. The war created non-availability of aircraft for FY-03 installations, therefore moving 15 installations to FY04.

Installation Schedule

	FY 2002 & Prior	FY 2003				FY 2004				FY 2005				FY 2006				FY 2007			
		1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
In	49	10	10	10	12	4	4	4	3												
Out	37	12	10	10	10	12	4	4	4	3											

	FY 2008				FY 2009				To Complete	TOTAL
	1	2	3	4	1	2	3	4		
In										106
Out										106

Exhibit P-3a	INDIVIDUAL MODIFICATION
MODIFICATION TITLE <u>S-3 Critical Avionics Upgrade (OSIP 20-95)</u>	
MODELS OF SYSTEM AFFECTED: <u>S-3B</u>	TYPE MODIFICATION: <u>Operational Improvement/Obsolescence</u>
DESCRIPTION/JUSTIFICATION:	
<p>This program replaces the Automatic Flight Control Systems (AFCS), Inertial Navigation Systems (INS), Flight Instruments, Mission Displays, and Armament Control Systems (ARMCOS) which have become significant obsolescence/non-supportability degraders for the S-3B aircraft. Modification of these critical avionics systems will ensure respective system operation and availability for the current and projected (2015) service life of the airframe. Trainer procurement is to incorporate all four systems into the S-3B Fleet Weapons Systems Trainers (WST), Position Trainer Complex Modules (PTCM) and Maintenance Trainers. The requirement for these modifications is described in Operational Requirements Document (ORD) 408-88-95 dated 13 July 95.</p>	
<p>DIGITAL FLIGHT DATA COMPUTER (DFDC) (Engineering Change Proposal (ECP) 426): The Flight Data Computer (FDC) is the central computing component of the Automatic Flight Control System (AFCS). The present obsolete FDC is subject to failure modes which have been demonstrated to cause uncommanded roll input to the flight control system. This modification will be installed in all of the existing 109 S-3B aircraft.</p>	
<p>CARRIER AIRCRAFT INERTIAL NAVIGATION SYSTEM (CAINS II); EMBEDDED Global POSITIONING SYSTEM (GPS) INERTIAL (EGI); ELECTRONIC FLIGHT INSTRUMENTS (EFI) (ECP 427): This is a replacement program for the S-3B navigation, heading and attitude system, and associated flight instruments. The existing system has become increasingly non-supportable due to parts obsolescence and material condition of the chassis and internal wiring. Replacement avionics hardware consists of a CAINS II, an EGI, four new EFIs for the cockpit, and 1553B digital Navigation Interface Unit (NIU) which connects the flight instruments to the navigation system bus and mission computer. The CAINS II and the EGI provide the two required heading platform stabilization sources necessary for embarked operations or night/instrument flight. This modification will be installed in all of the existing 109 S-3B aircraft.</p>	
<p>STORES MANAGEMENT SYSTEM (SMS)(ECP NORIS 008-00) : This modification provides an obsolescence upgrade of the Armament Control Panel, Bomb Bay/Wing Decoders and wiring that comprise the current S-3 Armament Control System (ARMCOS) and a NDI digital Stores Management System (SMS) including small circular error probability weapon. An operable SMS is required for loading, carriage and/or jettison of any internal or external stores including the Aerial Refueling Store, torpedoes, and/or Harpoon. This modification will be installed in 42 S-3B aircraft, with B kits procured for 43 aircraft.</p>	
DEVELOPMENT STATUS/MAJOR DEVELOPMENT MILESTONES:	
<p>Milestone III decision for Critical Avionics Upgrade approved Oct 1995. DFDC hardware CDR held SEP 96, software CDR held MAY 97, EDM testing commenced DEC 97. CAINS/EGI/EFI system CDR held OCT 97, prototype install commenced July 1998. RFP for SMS released May 1998. Displays CDR commenced June 1998.</p>	

Exhibit P-3a

INDIVIDUAL MODIFICATION

MODIFICATION TITLE S-3 Critical Avionics Upgrade (OSIP 20-95)

MODELS OF SYSTEM AFFECTED: S-3B

TYPE MODIFICATION Safety/Obsolescence

FINANCIAL PLAN (TOA, \$ in Millions):

	Prior Years		FY 2003		FY 2004		FY 2005		FY 2006		FY 2007		FY 2008		FY 2009		To Complete		TOTAL		
	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	
<i>RDT&amp;E</i>																					
<i>PROCUREMENT</i>																					
Installation Kits ***																					
SMS (ARMCOS)	42	2.0																	42	2.0	
CAINS/EFI/NIU	111	17.8																	111	17.8	
Installation Kits N/R		15.7																			15.7
Installation Equipment																					
DFDC	92	8.4																	92	8.4	
CAINS	111	43.1																	111	43.1	
SMS (ARMCOS)/MAVERICK PL	43	6.3																	43	6.3	
Installation Equipment N/R		31.4																			31.4
Engineering Change Orders																					
Data		1.4																			1.4
Training Equipment		8.4		.4																	8.8
Support Equipment																					
ILS		2.1																			2.1
Other Support		44.4		2.3																	46.8
Interim Contractor Support																					
Installation Cost		11.7		2.9																	14.7
<b>TOTAL PROCUREMENT</b>	<b>422</b>	<b>192.8</b>		<b>5.6</b>															<b>399</b>	<b>198.4</b>	

Notes:

1. Totals do not add due to rounding
2. Asterisk indicates amount less than 51K

\*\*\* One (1) Prototype (CAINS,DFDC,ARMCOS) and one (1) Trial Kit Installation (TKI) (CAINS,DFDC) procured via NRE will be installed in fleet aircraft bringing total aircraft to 111. Remaining nineteen (19) DFDC procured by ES-3A program.

Exhibit P-3a

Exhibit P-3a

MODELS OF SYSTEMS AFFECTED: S-3B MODIFICATION TITLE: S-3 Critical Avionics Upgrade (OSIP 20-95) SMS (ARMCOS)

INSTALLATION INFORMATION:

METHOD OF IMPLEMENTATION: Contractor Field Mod Team

ADMINISTRATIVE LEADTIME: 4 Months PRODUCTION LEADTIME: 12 Months

CONTRACT DATES: FY 2003:      FY 2004:      FY 2005:     

DELIVERY DATE: FY 2003:      FY 2004:      FY 2005:     

(\$ in Millions)

Cost:	Prior Years		FY 2003		FY 2004		FY 2005		FY 2006		FY 2007		FY 2008		FY 2009		TC		TOTAL	
	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$
FY 2002 & PY (42) kits *	14	2.6	28	0.5															42	3.2
FY 2003 () kits																				
FY 2004 () kits																				
FY 2005 () kits																				
FY 2006 () kits																				
FY 2007 () kits																				
FY 2008 () kits																				
FY 2009 () kits																				
To Complete () kits																				
<b>TOTAL</b>	14	2.6	28	.5															42	3.2

\* Includes one (1) Prototype

Twenty-five (25) installs funded in FY02 will be installed in FY03.

Installation Schedule

	FY 2002	FY 2003				FY 2004				FY 2005				FY 2006				FY 2007				
	& Prior	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	
In	14	7	9	7	5																	
Out	12	8	8	7	7																	

	FY 2008				FY 2009				To	TOTAL
	1	2	3	4	1	2	3	4	Complete	
In										42
Out										42

P-1 SHOPPING LIST  
ITEM NO. 35

Exhibit P-3a

MODELS OF SYSTEMS AFFECTED: S-3B MODIFICATION TITLE: S-3 Critical Avionics Upgrade (OSIP 20-95) CAINS II

INSTALLATION INFORMATION:

METHOD OF IMPLEMENTATION: FY 97 prototype/TKI was procured as contractor "turn-key". FY 98 and out are Contractor Field Mod Team (Airframe Block).

ADMINISTRATIVE LEADTIME: 4 Months PRODUCTION LEADTIME: 12 Months

CONTRACT DATES: FY 2003:      FY 2004:      FY 2005:     

DELIVERY DATE: FY 2003:      FY 2004:      FY 2005:     

(\$ in Millions)

Cost:	Prior years		FY 2003		FY 2004		FY 2005		FY 2006		FY 2007		FY 2008		FY 2009		To Complete		TOTAL	
	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$
FY 2002 & PY (111) kits	85	.0	22**	2.4	2***														109	11.4
FY 2003 () kits																				
FY 2004 () kits																				
FY 2005 () kits																				
FY 2006 () kits																				
FY 2007 () kits																				
FY 2008 () kits																				
FY 2009 () kits																				
To Complete () kits																				
<b>TOTAL</b>	85	.0	22**	2.4	2***														109	11.4

\* Includes one (1) Prototype and one (1) TKI.

\*\* Ten (10) installs funded in FY01 and prior will be installed in FY2003

\*\*\* Two (2) installs funded in FY03 will be installed in FY04

Installation Schedule

	FY 2002 & Prior	FY 2003				FY 2004				FY 2005				FY 2006				FY 2007				
		1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	
In	85	6	5	5	6	2																
Out	85	4	4	6	6	4																

	FY 2008				FY 2009				To Complete	TOTAL
	1	2	3	4	1	2	3	4		
In										109
Out										109

NOTE: Two (2) aircraft stricken before their scheduled CAINS II install.

Exhibit P-3a

INDIVIDUAL MODIFICATION

MODIFICATION TITLE Co-Processor Memory Unit (OSIP 04-96)

MODELS OF SYSTEM AFFECTED: S-3B

TYPE MODIFICATION: Operational Improvement

DESCRIPTION/JUSTIFICATION:

The Co-Processor Memory Unit (CPMU) replaces the S-3B MMU-576 Drum Memory Storage (DMS) Unit, the OL-230 Post and Display Processor (PDP) and the AN/AYK-10 General Purpose Digital Computer (GPDC). The Operational Requirements Document (ORD) # OR-927-AS was approved 27 Mar 77 and stated the requirement for software and computer capability to support a targeting capability and direct exchange of data between CV, CVW and surface assets. Moreover, the reliability, maintainability, and obsolescence of the DMS, PDP, and GPDC has degraded to levels which significantly hinder the ability to meet aircraft tactical mission requirements. The CPMU development agreement between the U.S. Navy and Canadian Government contained the requirement for an open architecture design which replaced obsolete equipment. The CPMU fully emulates the DMS and replaces 5 WRA's, resulting in significant space/weight savings. CPMU incorporates an open architecture design as a foundation for future processor growth. CPMU will host a mission program written in ADA software language (RDT&E funded). Trainer procurement is for maintenance trainer A and B kits. The ECP for this effort is Loral AYK-23-002 (with revisions) which modifies 65 aircraft and provides growth interfaces to host additional mission equipment. Procurement includes mission enhancements to provide for compatibility with S-3B Surveillance System Upgrade (which encompasses an APS-137 radar and EO/IR sensor) and is in conformance with the ORD cited above.

DEVELOPMENT STATUS/MAJOR DEVELOPMENT MILESTONES:

The Co-Processor Memory Unit (CPMU) program was initiated as a joint U.S. Navy/Canadian industrial base development effort in 1991. A competitive development contract was awarded in FY 1992. Installation of EDM was completed in April 1995. Approval for LRIP was received in June 1996. LRIP production contract was awarded in June 1996. TKI commenced August 1998. Operational Testing was successfully completed in March 1999. Milestone III decision was approved in June 1999. First fleet installs began in June 1999.

FINANCIAL PLAN (TOA, \$ in Millions):

	Prior Years		FY 2003		FY 2004		FY 2005		FY 2006		FY 2007		FY 2008		FY 2009		TC		TOTAL		
	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	
RDT&E (H0489)		38.0		0.4																	38.5
<b>PROCUREMENT</b>																					
Installation Kits																					
AYK-23 (SSU) **	2	.1																		2	.1
AYK-23	63	1.3	2	.1																65	1.4
Installation Kits N/R		.3																			.3
Installation Equipment																					
AYK-23 (SSU) **	2	1.9																		2	1.9
AYK-23	63	30.8	2	1.2																65	31.9
Installation Equipment N/R		2.8																			2.8
Engineering Change Orders																					
Data		.3																			.3
Training Equipment	1	.9																		1	.9
Support Equipment		.1																			.1
ILS		1.1		.2																	1.3
Other Support		6.6		.9																	7.5
Interim Contractor Support																					
Installation Cost	56	1.6	8	.3	2	.1														66	2.0
<b>TOTAL PROCUREMENT</b>	<b>187</b>	<b>47.8</b>	<b>12</b>	<b>2.5</b>	<b>2</b>	<b>.1</b>														<b>201</b>	<b>50.5</b>

Notes:

1. Totals do not add due to rounding      \*\* AYK-23 (SSU) A&B kits installed at "O" level
2. Asterisk indicates amount less than 51K

Exhibit P-3a

Exhibit P-3a

MODELS OF SYSTEMS AFFECTED: S-3B MODIFICATION TITLE: Co-Processor Memory Unit (OSIP 04-96)

INSTALLATION INFORMATION:

METHOD OF IMPLEMENTATION: Field Mod Team

ADMINISTRATIVE LEADTIME: 11 Months PRODUCTION LEADTIME: 16 Months

CONTRACT DATES: FY 2003: 8/03 FY 2004:        FY 2005:       

DELIVERY DATE: FY 2003: 12/03 FY 2004:        FY 2005:       

(\$ in Millions)

Cost:	Prior Years		FY 2003		FY 2004		FY 2005		FY 2006		FY 2007		FY 2008		FY 2009		TC		TOTAL	
	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$
FY 2002 & PY (64) kits	56	1.6	8	.3															64	1.9
FY 2003 (2) kits					2	.1													2	.1
FY 2004 ( ) kits																				
FY 2005 ( ) kits																				
FY 2006 ( ) kits																				
FY 2007 ( ) kits																				
FY 2008 ( ) kits																				
FY 2009 ( ) kits																				
To Complete ( ) kits																				
<b>TOTAL **</b>	56	1.6	8	.3	2	.1													66	2.0

\* Indicates amount less than 51K.  
 \*\* Includes fleet end items for training.

Installation Schedule

	FY 2002 & Prior	FY 2003				FY 2004				FY 2005				FY 2006				FY 2007				
		1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	
In	56	2	2	2	2	2																
Out	56	2	2	2	2	2																

	FY 2008				FY 2009				To Complete	TOTAL
	1	2	3	4	1	2	3	4		
In										66
Out										66

Exhibit P-40, BUDGET ITEM JUSTIFICATION										DATE: February 2004	
APPROPRIATION/BUDGET ACTIVITY Aircraft Procurement, Navy/APN-5 Aircraft Modifications							P-1 ITEM NOMENCLATURE E-2C Series Modification				
Program Element for Code B Items: Aircraft Procurement, Navy/APN-5 Aircraft Modifications							Other Related Program Elements				
	Prior Years	ID Code	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	To Complete	Total
QTY		A									
COST (In Millions)	442.2	A	25.0	50.3	15.1	13.8	9.4	9.3	8.6	347.0	920.7
<p>This line item funds modifications to E-2C aircraft. The E-2C is an all weather, carrier based, airborne early warning and command and control aircraft. It extends task force defense perimeters by providing early warning of approaching enemy units and by vectoring interceptors into attack position. Additionally, the HAWKEYE provides strike control, radar surveillance, search and rescue assistance, communications relay and automatic tactical data exchange. The E-2C aircraft design service life is 10,000 flight hours with an average service life remaining through FY 2015. In future years, the E-2C will be a critical element of the Navy's Cooperative Engagement Capability (CEC). To realize efficiencies in cost and scheduling, the HAWKEYE 2000 OSIPs (SATCOM, Vapor Cycle, Mission Computer Upgrade (MCU) and CEC) were consolidated into one Engineering Change Proposal (ECP-418). Subsequent to establishment of ECP-418, it has become exceedingly difficult to coordinate kit and install quantities, contract dates, and training requirements across the four ECP-418 OSIPs. Beginning in FY 1999 the ECP-418 OSIPs were combined into one new OSIP, 19-99 Block Upgrade III. Consolidation of the OSIPs provides management a concise picture of cost and schedule requirements to modify and field HAWKEYE 2000 aircraft. As the result of today's technological advancements, the Commercial-Off-The-Shelf (COTS) hardware/software of the MCU will change or become obsolete in the very near future. The Technology Insertion OSIP (5-01) supports assembly, validation and configuration management of COTS hardware/software of the MCU. In the Outerwing Panel (OWP) OSIP, the FY05-FY08 funding increase is for OWP enhancements. The FY04-FY08 funding is for OWP enhancements. Critical War Fighting Enhancements OSIP (19-04) will fund preliminary design, flight test, and instrumentation engineering for In-flight refueling kit and will allow for prototype development and testing to interphase with F/A-18E/F fuel tanker.</p> <p>The Defense Emergency Relief Fund (DERF) II Naval Inventory Control Point (NAVICP) Project Unit (08330) procures 283 generators to retrofit fatigued iron generators in the fleet.</p> <p>The specific modifications budgeted and programmed are:</p>											
(TOA, \$ in Millions)											
OSIP No.	Description	Prior Years	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	To Complete	Total
121-87	Structural Enhancements	56.3	5.6	3.3	3.0	2.6	0.2			1.9	72.9
74-88	Block Upgrade II	217.9	3.4	9.3	2.9	2.7	0.7			25.9	262.8
87-88	Outer Wing Panels	11.5		1.5	1.5	1.2	1.2	0.6			17.4
19-99	Block Upgrade III	140.0	7.0	26.0						247.3	420.3
5-01	Technology Insertion	16.5	9.0	7.2	7.8	7.4	7.3	8.8	8.6	71.9	144.4
19-04	Critical War Fighting Enhancements			3.0							3.0
<b>Total</b>		<b>442.2</b>	<b>25.0</b>	<b>50.3</b>	<b>15.1</b>	<b>13.8</b>	<b>9.4</b>	<b>9.3</b>	<b>8.6</b>	<b>347.0</b>	<b>920.7</b>
<b>Note: Totals may not add due to rounding.</b>											

MODIFICATION TITLE: Structural Enhancements (OSIP 121-87)

MODELS OF SYSTEMS AFFECTED: E-2C

TYPE MODIFICATION: Safety

DESCRIPTION/JUSTIFICATION:

The Navy Inventory Control Point (NAVICP) projected an E-2C propeller shortage in FY 2000. As a result, NAVICP approved a Logistics Engineering Change Proposal (LECP) to procure a new eight-blade propeller for the E-2C program office. The LECP funds the non-recurring and the procurement of 187 propellers only. The E-2C program office is responsible for funding the ground/flight test and overall system integration between Northrop Grumman (airframe), Allison (engine) and Hamilton-Sunstrand(propellers). The ground/flight test and prototype propeller kits were funded with APN-1 funds starting in FY99. Starting in FY00 retrofit propeller kits and install are being funded with APN-5 funds for seventy-five (75) E-2 aircraft.

Defense Emergency Relief Fund (DERF) II funding procures 283 generators to retrofit fatigued iron generators in fleet.

DEVELOPMENT STATUS/MAJOR DEVELOPMENT MILESTONES:

Developmental Component Testing began in November 1998 and is ongoing. First successful developmental flight test took place in April 01. Flight test is still ongoing and is expected to be completed in 2nd QTR 04. In FY04, the OSIP is ramping up the installation of propellers with associated ILS and other support.

Generators on contract began delivery in February 2003 at a rate of 10 units per month, a total of 233 were units delivered by December 2003.

FINANCIAL PLAN: (TOA, \$ in Millions)

	Prior Years		FY 2003		FY 2004		FY 2005		FY 2006		FY 2007		FY 2008		FY2009		To Complete		Total		
	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	
RDT&E																					
PROCUREMENT																					
Installation Kits																					
LECP Propellers	75	1.2																			
Installation Kits N/R		14.3																			
Installation Equipment																					
Generators (DERF)	283	4.4																			
Installation Equipment N/R																					
Engineering Change Orders		0.8																			
Data		0.8																			
Training Equipment		0.0	1	2.5																	
Support Equipment		1.4																			
Automatic Wiring Analysis				1.5																	
ILS																					
LECP Propellers		2.1		1.0		1.4		1.0													
Other Support		26.2																			
LECP Propellers		5.2		0.6		1.0		0.8													
Interim Contractor Support																					
Installation Cost																					
LECP Propellers	2	0.1	1	0.1	19	1.0	24	1.2													
<b>Total Procurement</b>		<b>56.3</b>		<b>5.6</b>		<b>3.3</b>		<b>3.0</b>													

Notes:

1. Totals may not add due to rounding
2. Asterisk indicates amount less than \$50K

**Exhibit P-3a**

MODELS OF SYSTEMS AFFECTED: E-2C

MODIFICATION TITLE: Structural Enhancements (OSIP 121-87)

INSTALLATION INFORMATION: This installation information is for the Propeller ECP only

METHOD OF IMPLEMENTATION: Contractor Depot Field Mod Team

ADMINISTRATIVE LEADTIME: 1 Months

PRODUCTION LEADTIME: 4 Months

CONTRACT DATES: FY 2003: \_\_\_\_\_

FY 2004: \_\_\_\_\_

FY 2005: \_\_\_\_\_

DELIVERY DATE: FY 2003: \_\_\_\_\_

FY 2004: \_\_\_\_\_

FY 2005: \_\_\_\_\_

(\$ in Millions)

Cost:	Prior Years		FY 2003		FY 2004		FY 2005		FY 2006		FY 2007		FY 2008		FY 2009		To Complete		TOTAL		
	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	
FY 2002 & PY (75) kits	2	0.1	1	0.1	19	1.0	24	1.2													
FY 2003 ( ) kits																					
FY 2004 ( ) kits																					
FY 2005 ( ) kits																					
FY 2006 ( ) kits																					
FY 2007 ( ) kits																					
FY 2008 ( ) kits																					
FY 2009 ( ) kits																					
To Complete ( ) kits																					
<b>TOTAL</b>	<b>2</b>	<b>0.1</b>	<b>1</b>	<b>0.1</b>	<b>19</b>	<b>1.0</b>	<b>24</b>	<b>1.2</b>													

Installation Schedule

	FY 2002 & Prior	FY 2003				FY 2004				FY 2005				FY 2006				FY 2007				
		1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	
In	2		1			4	5	5	5	6	6	6	6									
Out	2			1		4	5	5	5	6	6	6	6									

	FY 2008				FY 2009				To Complete	TOTAL
	1	2	3	4	1	2	3	4		
In										
Out										

Notes:

1. Fleet installation schedule shifted due to flight test evaluation, aircraft inspection, and power plant repair delays.
2. Asterisk indicates amount less than \$50K

Exhibit P-3a	Individual Modification									
MODIFICATION TITLE:	<u>Block Upgrade II (OSIP 74-88)</u>									
MODELS OF SYSTEMS AFFECTED:	<u>E-2C</u> <span style="float: right;">TYPE MODIFICATION: <u>Mission Performance Enhancement</u></span>									
DESCRIPTION/JUSTIFICATION:										
<p>1. Group II Mission Computer Replacement Program (GrIIm RePR). This effort is a Commercial Off the Shelf (COTS) technology transition MOD program and does not expand the functional envelope of the current Weapon System.</p> <p>2. ECP 934-01 "Dual Element Fire Warning System" -Replaces the single loop Fire Warning Detection System in the E-2C aircraft with a dual loop system configuration. The dual loop system will alleviate false warning indications. Seventy-four (74) aircraft will be retrofitted with this ECP.</p> <p>3. Radar Obsolescence - Funds Obsolescence/Readiness Improvements to the APS-145. The APS-145 is the number one mission degrader for the weapon system. This OSIP will resolve radar component reliability and obsolescence issues. The funding increase in FY04 over the value in FY03 is for radar obsolescence.</p> <p>4. ECP 939-01 - "Vapor Cycle" - Funds wiring modification, rebusung of undersized wiring between circuit breakers in the vapor cycle system. Fifty-Two (52) aircraft will be retrofitted with this modification.</p> <p>5. Engine Turbine Blade Cost Reduction &amp; Effectiveness Improvement (CREI) - ' T56-A-427 First Stage Turbine Blade-Track Seal Replacement' - A more durable metal blade track seal will replace the current ceramic seal. This design change is consistent with newer technology engines and is expected to increase the reliability of the T56-A-427 engine by reducing low power removals.</p>										
DEVELOPMENT STATUS/MAJOR DEVELOPMENT MILESTONES:										
Kits are being procured and installed on all applicable aircraft.										
FINANCIAL PLAN: (TOA, \$ in Millions)										
	Prior Years	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY2009	To Complete	Total
	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$
RDT&E										
PROCUREMENT										
Installation Kits										
Safety ECP 934-01Dual Fire Warn	74	1.7								
Safety ECP 939-01 Vapor Cycle	52	0.8								
Installation Kits N/R		47.6								
Engine Turbine Blade (CREI)			1.2	1.1	0.8					
ECP xxx GrIImpR		13.8	1.3							
Installation Equipment										
Radar Obsolescence				6.9	1.5					
Installation Equipment N/R		1.0								
Engineering Change Orders										
Data		15.2								
Training Equipment	2	59.4								
Support Equipment		40.9								
ILS		15.2		0.3						
Other Support		21.8								
Interim Contractor Support										
Installation Cost										
Safety ECP 939-01 Vapor Cycle	1	0.0	17	0.3	18	0.3	11	0.2		
Safety ECP 934-01 Dual Ele Fir Wa	18	0.6	15	0.5	18	0.6	13	0.4		
<b>Total Procurement</b>		<b>217.9</b>	<b>3.4</b>	<b>9.3</b>	<b>2.9</b>					

Notes:

- Totals may not add due to rounding
- Asterisk indicates amount less than \$50K

**Exhibit P-3a**

MODELS OF SYSTEMS AFFECTED: E-2C MODIFICATION TITLE: Block Upgrade II (OSIP 74-88)

INSTALLATION INFORMATION: This installation information is for the Dual Element Fire Warning Safety ECP 934-01.

METHOD OF IMPLEMENTATION: Depot Drive In Modification

ADMINISTRATIVE LEADTIME: 1 Months PRODUCTION LEADTIME: 1 Months

CONTRACT DATES: FY 2003: \_\_\_\_\_ FY 2004: \_\_\_\_\_ FY 2005: \_\_\_\_\_

DELIVERY DATE: FY 2003: \_\_\_\_\_ FY 2004: \_\_\_\_\_ FY 2005: \_\_\_\_\_

(\$ in Millions)

Cost:	Prior Years		FY 2003		FY 2004		FY 2005		FY 2006		FY 2007		FY 2008		FY 2009		To Complete		TOTAL	
	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$
FY 2002 & PY (74) kits	18	0.6	15	0.5	18	0.6	13	0.4												
FY 2003 ( ) kits																				
FY 2004 ( ) kits																				
FY 2005 ( ) kits																				
FY 2006 ( ) kits																				
FY 2007 ( ) kits																				
FY 2008 ( ) kits																				
FY 2009 ( ) kits																				
To Complete ( ) kits																				
<b>TOTAL</b>	<b>18</b>	<b>0.6</b>	<b>15</b>	<b>0.5</b>	<b>18</b>	<b>0.6</b>	<b>13</b>	<b>0.4</b>												

	FY 2002 & Prior	FY 2003				FY 2004				FY 2005				FY 2006				FY 2007			
		1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
In	18	4	4	4	3	5	5	4	4	4	4	3	2								
Out	9	9	4	4	4	3	5	5	4	4	4	4	3								

	FY 2008				FY 2009				To Complete	TOTAL
	1	2	3	4	1	2	3	4		
In										
Out										

**Exhibit P-3a**

MODELS OF SYSTEMS AFFECTED: E-2C MODIFICATION TITLE: Block Upgrade II (OSIP 74-88)

INSTALLATION INFORMATION: This installation information is for the Vapor Cycle Safety ECP 939-01

METHOD OF IMPLEMENTATION: Depot Drive-Modification (DIM)

ADMINISTRATIVE LEADTIME: 1 Months PRODUCTION LEADTIME: 5 Months

CONTRACT DATES: FY 2003: \_\_\_\_\_ FY 2004: \_\_\_\_\_ FY 2005: \_\_\_\_\_

DELIVERY DATE: FY 2003: \_\_\_\_\_ FY 2004: \_\_\_\_\_ FY 2005: \_\_\_\_\_

(\$ in Millions)

Cost:	Prior Years		FY 2003		FY 2004		FY 2005		FY 2006		FY 2007		FY 2008		FY 2009		To Complete		TOTAL		
	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	
FY 2002 & PY (52) kits	1	0.0	17	0.3	18	0.3	11	0.2													
FY 2003 ( ) kits																					
FY 2004 ( ) kits																					
FY 2005 ( ) kits																					
FY 2006 ( ) kits																					
FY 2007 ( ) kits																					
FY 2008 ( ) kits																					
FY 2009 ( ) kits																					
To Complete ( ) kits																					
<b>TOTAL</b>	<b>1</b>	<b>0.0</b>	<b>17</b>	<b>0.3</b>	<b>18</b>	<b>0.3</b>	<b>11</b>	<b>0.2</b>													

FY 2002 & Prior	FY 2003				FY 2004				FY 2005				FY 2006				FY 2007			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
In	1	5	4	4	4	5	4	5	4	4	4	2	1							
Out	1	5	4	4	4	4	5	4	5	4	4	4	2							

	FY 2008				FY 2009				To Complete	TOTAL
	1	2	3	4	1	2	3	4		
In										52
Out										52

Notes:  
1. Asterisk indicates amount less than \$50K

Exhibit P-3a	Individual Modification
MODIFICATION TITLE:	<u>Outer Wing Panel (OSIP 87-88)</u>
MODELS OF SYSTEMS AFFECTED:	<u>E-2C</u> <span style="margin-left: 200px;">TYPE MODIFICATION:</span> <u>Safety</u>
<p>DESCRIPTION/JUSTIFICATION:                  The E-2C fatigue test and inspection of aircraft have identified fatigue stress cracks in Outer Wing Panels (OWP) which would cause the loss of aircraft and resulting in injury or loss of personnel. The OWP's installed on the E-2C aircraft are flight hour limited as follows: OWP's installed on T56-A-425 configured aircraft are limited to 6,000 flight hours and OWP's installed on T56-A-427 configured aircraft are limited to 7,500 flight hours. Teardowns of fleet OWP's showed that overhaul of the OWP is neither technically practical nor cost effective. This modification develops and incorporates enhancements to the OWP which extends the aircraft service life thru FY 2015. There are seventy-five (75) aircraft in the inventory. Thirty-four (34) aircraft will be enhanced with the AYC-1222 OWP (ECP 91145/C2A/859-97 Rev. (A) increasing the fatigue life limit of E-2C Outer Wing Panels. FY04 funding of \$1.5 million is a Congressional plus-up.</p>	
<p>DEVELOPMENT STATUS/MAJOR DEVELOPMENT MILESTONES:                  An updated design OWP's was installed on all new production aircraft delivered after April 1985. Earlier aircraft will be retrofitted with the newly designed OWP.</p>	
FINANCIAL PLAN: (TOA, \$ in Millions)	
	Prior Years      FY 2003      FY 2004      FY 2005      FY 2006      FY 2007      FY 2008      FY2009      To Complete      Total
	Qty      \$      Qty      \$
RDT&E	
PROCUREMENT	
Installation Kits	
ECP 91145/C2A/859-97 Rev. A	
Attaching Hardware	5      1.4
Installation Kits N/R	6.8
Installation Equipment	
Installation Equipment N/R	
Engineering Change Orders	
Data	1.7
Training Equipment	
Support Equipment	0.9
ILS	0.3
Other Support	0.4
Interim Contractor Support	
Installation Cost	
ECP 91145/C2A/859-97 Rev. A	8      1.0      9      0.8
<b>Total Procurement</b>	<b>11.5</b> <b>1.5</b> <b>1.5</b>
Notes:	
1. Totals may not add due to rounding	
2. Asterisk indicates amount less than \$50K	



Exhibit P-3a Individual Modification

MODIFICATION TITLE: Block Upgrade III (OSIP 19-99)

MODELS OF SYSTEMS AFFECTED: E-2C TYPE MODIFICATION: Mission Performance Enhancement

**DESCRIPTION/JUSTIFICATION:**

The HAWKEYE 2000 OSIPs (Satellite Communications 21-95, Vapor Cycle 22-95, Mission Computer Upgrade 4-97, and Cooperative Engagement Capability 12-97) were consolidated into one engineering change proposal (ECP-418) to realize efficiencies in cost and scheduling. Subsequent to establishment of ECP-418, it has become exceedingly difficult to coordinate kit and install quantities, contract dates, and training requirements across the four ECP-418 OSIPs. Beginning in FY 1999 the ECP-418 OSIPs were combined into one new OSIP, 19-99 Block Upgrade III. Consolidation of the OSIPs provides management a concise picture of cost and schedule requirements to modify and field HAWKEYE 2000 aircraft. The funding in FY99 thru FY00 for training equipment is to support the HAWKEYE 2000 production aircraft. The funding procured one (1) of two (2) CEC Antenna Trainers, two (2) of three (3) Weapon System Trainer (WST) modifications, Maintenance trainer design, WST design, Computer Based Trainer (CBT) update, training curriculum and initial training. To complete includes one (1) Integrated System Maintenance Trainer (ISMT), one (1) CEC Antenna Trainer and one (1) Weapon System Trainer modifications. There are seventy-five (75) total aircraft in the inventory. To date three (3) aircraft have been retrofitted with this ECP. Navy intends on retrofitting a portion of the E-2C aircraft above and beyond the 21 aircraft multi-year procurement.

Satellite Communication (SATCOM): By JCS directives, all components of the Armed Forces who have satellite communications must be able to communicate using the Demand Assign Multiple Access (DAMA) waveform and be capable of narrow band secure voice. To meet these requirements the E-2C program will integrate Mini-DAMA into the aircraft. The Mini-DAMA unit is a UHF, full duplex radio with four full duplex ports and eight half duplex baseboard input/output. It incorporates the UHF SATCOM, line of sight radio functions, 5 and 25 KHz DAMA waveforms and embedded OTCIXS II, KGV-11 (TRANSEC) and COMSEC module for odewire encryption for both 5 and 25 KHz DAMA functions. The Mini-DAMA has growth provisions for secure voice (ANDVT), TADIX-A, KG-84A and SAFENET. Previously OSIP# 21-95. ORD Number 174-094-87 dated 12 Aug 87. There are seventy-five (75) aircraft in the inventory. Fifty-Five (55) aircraft will be retrofitted with this modification. FY04 funding of \$3.0 million is a Congressional plus-up.

Mission Computer Upgrade (MCU): The L-304 central data processing computer uses inputs from onboard sensors, data links, and a library of stored data to present a symbolic representation of the tactical situation to the operators. Data expansion resulting from Update Development Program II has pushed the computer capability to it's ultimate limit, preventing utilization of improved target detection which could be achieved by emerging radar technology, infrared search and track, and SATCOM. All of these technologies are needed for execution of the E-2C battle management mission and for cooperative engagement operations. This OSIP funds retrofit of a replacement computer based on proven advances in computer technology and developed under the RDT&E Program Element No. 0204152N. As part of the MCU suite, the three (3) existing Cathode Ray Tube displays will be replaced with Advance Control Indicator Set (ACIS) workstations incorporating flat panel displays, and connected via a local area network. The layout of the ACIS workstation controls has been heavily influenced by Fleet inputs. Additionally, based on Commercial Off The Shelf (COTS) technology, the ACIS workstations will streamline Integrated Logistics Support and facilitate future upgrades. Previously OSIP# 4-97. ORD Number 371-88-94 dated 20 Sep 94. There are seventy-five (75) aircraft in the inventory. Navy intends on retrofitting a portion of the E-2C aircraft above and beyond the 21 aircraft multi-year procurement.

Cooperative Engagement Capability (CEC): The Navy has developed the capability to share sensor data through a network and perform the targeting process using sensors installed in remote platforms to augment the target position information on individual ships. The E-2C radar and passive detection systems provide vital target information over an increased surveillance area for greater situational awareness and provides early warning of distant targets. This program identifies the costs associated with integrating CEC into 53 E-2Cs and developing the support structure necessary to successfully deploy the system. Previously OSIP# 12-97. ORD Number 388-86-95 dated 4 Jan 95. There are seventy-five (75) aircraft in the inventory. Navy intends on retrofitting a portion of the E-2C aircraft above and beyond the 21 aircraft multi-year procurement. FY04 funding was increased to retrofit six (6) Hawkeye 2000 with CEC.

**DEVELOPMENT STATUS/MAJOR DEVELOPMENT MILESTONES:**

SATCOM: PMW-156 is the sponsor on the Mini-DAMA. LRIP deliveries started in June 1996. Operational Assessment completed and production has resumed.

Vapor Cycle: NA.

Mission Computer Upgrade (MCU): LRIP decision was granted in July 1997. TECHEVAL was successfully completed in Oct. 2000. OPEVAL was successfully completed in July 01. Full Rate Production began in FY01.

Cooperative Engagement Capability (CEC): PEO TAD(C) is the sponsor of Cooperative Engagement Capability.

**FINANCIAL PLAN: (TOA, \$ in Millions)**

	Prior Years		FY 2003		FY 2004		FY 2005		FY 2006		FY 2007		FY 2008		FY2009		To Complete		Total		
	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	
RDT&E																					
PROCUREMENT																					
Installation Kits																					
ECP 418-Hawkeye CEC MCU	3	26.2																		3	26.2
E-2C SATCOM MINI DAMA Kit	17	6.0			5	1.6											33	13.2	55	20.8	
Installation Kits N/R																					
E-2C SATCOM MINI-DAMA						0.2															
Installation Equipment																					
CEC Boxes	4	21.9	1	7.0	6	23.0											42	165.0	53	216.9	
ECP 418-Hawkeye 2000	3	32.6																		3	32.6
Installation Equipment N/R																					
Engineering Change Orders																					
Data		0.7				0.1													7.3		8.1
Training Equipment	3	34.6				0.3												2	21.8	5	56.7
ISMT Trainer																		1	11.5	1	11.5
Support Equipment		0.9																	9.9		10.9
ILS		0.1				0.0													5.1		5.2
Other Support		8.1				0.8													13.5		22.4
Interim Contractor Support																					
Installation Cost																					
ECP 418-Hawkeye 2000	3	8.7																		3	8.7
<b>Total Procurement</b>		<b>140.0</b>		<b>7.0</b>		<b>26.0</b>													<b>247.3</b>		<b>420.3</b>

**Notes:**

- Totals may not add due to rounding
- FY04 6 CEC boxes \$23279 for HE2K backfits

**Exhibit P-3a**

MODELS OF SYSTEMS AFFECTED: E-2C MODIFICATION TITLE: Block Upgrade III (OSIP 19-99)

INSTALLATION INFORMATION: ECP 418

METHOD OF IMPLEMENTATION: Contractor Drive-In Modification (2 year lead-time)

ADMINISTRATIVE LEADTIME: 3 Months

PRODUCTION LEADTIME: 18 Months

CONTRACT DATES: FY 2003: \_\_\_\_\_

FY 2004: \_\_\_\_\_

FY 2005: \_\_\_\_\_

DELIVERY DATE: FY 2003: \_\_\_\_\_

FY 2004: \_\_\_\_\_

FY 2005: \_\_\_\_\_

(\$ in Millions)

Cost:	Prior Years		FY 2003		FY 2004		FY 2005		FY 2006		FY 2007		FY 2008		FY 2009		To Complete		TOTAL		
	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	
FY 2002 & PY (3) kits	3	8.7																		3	8.7
FY 2003 ( ) kits																					
FY 2004 ( ) kits																					
FY 2005 ( ) kits																					
FY 2006 ( ) kits																					
FY 2007 ( ) kits																					
FY 2008 ( ) kits																					
FY 2009 ( ) kits																					
To Complete ( ) kits																					
<b>TOTAL</b>	<b>3</b>	<b>8.7</b>																		<b>3</b>	<b>8.7</b>

Installation Schedule

	FY 2002 & Prior	FY 2003				FY 2004				FY 2005				FY 2006				FY 2007				
		1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	
In	3																					
Out	2					1																

	FY 2008				FY 2009				To Complete	TOTAL
	1	2	3	4	1	2	3	4		
In										3
Out										3

Exhibit P-3a Individual Modification

MODIFICATION TITLE: Technology Insertion (OSIP 5-01)

MODELS OF SYSTEMS AFFECTED: E-2C TYPE MODIFICATION: Mission Performance Enhancement

**DESCRIPTION/JUSTIFICATION:**

Commercial technology obsolescence drives hardware and software changes in Computing Resources. Funding is required to support capability for assembly, validation, and configuration management of Commercial Off-The-Shelf (COTS) hardware/software provided to fleet squadrons and updated on a 4-year technology insertion cycle. Specific examples include video boards, memory boards, CPU cards, compilers, middleware, backplanes, and operating systems that will change or become obsolete. The new configuration must be validated, integrated, and controlled. There are seventy-five (75) aircraft in the inventory.

**DEVELOPMENT STATUS/MAJOR DEVELOPMENT MILESTONES:**

The Hawkeye 2000 Program Support Activity (PSA) will insure software is upgraded, revised, and integrated so it functions with the versions of the COTS hardware and software delivered. The integration effort must start no less than one year prior to the delivery.

**FINANCIAL PLAN: (TOA, \$ in Millions)**

	Prior Years		FY 2003		FY 2004		FY 2005		FY 2006		FY 2007		FY 2008		FY2009		To Complete		Total		
	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	
RDT&E																					
PROCUREMENT																					
Installation Kits																					
Installation Kits N/R																					
Installation Equipment																					
Installation Equipment N/R																					
Engineering Change Orders																					
Data																					
Training Equipment																					
Support Equipment																					
ILS		1.4		0.5		0.4		0.5													
Other Support																					
ACIS & MC CM Upgrade Support		0.9		0.5		0.3		0.5													
CEC CM & Upgrade Support		0.9		0.5		0.3		0.4													
Software Tools		1.9		1.2		1.2		1.2													
Software Integration & CM		6.8		3.8		3.0		3.2													
Software Upgrades		4.6		2.6		1.9		2.0													
Interim Contractor Support																					
Installation Cost																					
<b>Total Procurement</b>		<b>16.5</b>		<b>9.0</b>		<b>7.2</b>		<b>7.8</b>													

Notes:  
1. Totals may not add due to rounding



Exhibit P-40, BUDGET ITEM JUSTIFICATION							DATE: February 2004				
APPROPRIATION/BUDGET ACTIVITY Aircraft Procurement, Navy/APN-5 Aircraft Modifications							P-1 ITEM NOMENCLATURE Trainer Aircraft Modification				
Program Element for Code B Items:							Other Related Program Elements				
	Prior Years	ID Code	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	To Complete	Total
QTY											
COST (In Millions)	17.5	A	3.2	10.4	14.0	14.0	13.5	10.5		29.0	112.1
<p>This line item funds modifications to a group of trainer aircraft which includes T-34C, T-39, T-44A, TH-57, T-38, TC-12, and T-2C. The trainer aircraft are described as follows: The T-34C is a single engine turbo-prop, multi-seat aircraft produced by Beech Aircraft used to simulate jet aircraft flight; the T-39 is a dual-engine, multi-purpose aircraft used to train undergraduate flight officers; the T-44 is a twin-engine, multi-seat aircraft produced by Beech Aircraft used to simulate operation of twin engine aircraft, specifically the P-3; the TH-57 and TH-6 are a single-engine, multi-seat rotary wing aircraft used for helicopter training. The T-38 is a two seat twin-engine supersonic jet aircraft utilized by the US Navy Test Pilot School to train pilots, test flight officers, and test engines.</p> <p>The overall goal of the modification is to maintain safe and reliable operation of the trainer aircraft through the timely installation of necessary changes. The specific modifications budgeted and programmed are:</p>											
(TOA, \$ in Millions)											
<u>OSIP No.</u>	<u>Description</u>	<u>Prior Years</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>	<u>FY 2008</u>	<u>FY 2009</u>	<u>To Complete</u>	<u>Total</u>
05-00	T-39 UMFOTS UPGRADE	11.0	0.2	0.6							11.7
28-00	T-39 WING REPLACEMENT	6.6	3.0	0.6						8.4	18.5
05-04	T-44 AVIONICS OBSOLESCENCE			6.3	6.6	7.9	7.7	5.4			33.9
15-04	T-38 A/C CONVERSION			2.9	6.0	6.1	5.7	5.1		20.5	46.3
03-05	T-44 OXYGEN MASK/BRAKE REPLACEMENT				1.4						1.4
06-05	TRAINER LEGACY A/C FAA				0.1	0.1	0.1	0.1		0.1	0.3
	<b>Total</b>	<b>17.5</b>	<b>3.2</b>	<b>10.4</b>	<b>14.0</b>	<b>14.0</b>	<b>13.5</b>	<b>10.5</b>		<b>29.0</b>	<b>112.1</b>
<b>Note: Totals may not add due to rounding.</b>											

Exhibit P-3a Individual Modification

MODIFICATION TITLE: UMFOTS Upgrade (OSIP 05-00)

MODELS OF SYSTEMS AFFECTED: T-39N and T-39G Aircraft and Ground Based Training System (GBTS) TYPE MODIFICATION: Conversion/Safety

DESCRIPTION/JUSTIFICATION: The block upgrade to the Undergraduate Military Flight Officer Training System (UMFOTS) is needed to enable the system to continue training and improve safety of flight. This block upgrade consists of the following aircraft improvements: radar array upgrade (to be incorporated into 17 T-39Ns and 1 CT-38G), incorporation of GPS into 16 T-39N aircraft, incorporation of an Emergency Locator Transmitter (ELT) into the 8 T-39G aircraft, and incorporation of the Traffic Alert and Collision Avoidance System (TCAS II) into 17 T-39N and 8 T-39G aircraft. OPNAV approved the incorporation of the TCAS system which provides the capability for the T-39 aircraft to avoid mid-air collision. This system consists of a processor, transponder, indicator, control head, TCAS antenna top and bottom, and transponder antenna top and bottom. The incorporation of GPS into the T-39N aircraft complies with minimum FAA requirements for future U.S. airways operation. The GPS kit consists of a computer, antenna, wiring, and mounting hardware. GPS prototype was accomplished under separate modification with funds from PMA187. There are 17 T-39N in the fleet and 8 T-39Gs.

DEVELOPMENT STATUS/MAJOR DEVELOPMENT MILESTONES: The components of this block upgrade will be COTS as turnkey items.

FINANCIAL PLAN: (TOA, \$ in Millions)

	Prior Years		FY 2003		FY 2004		FY 2005		FY 2006		FY 2007		FY 2008		FY2009		To Complete		Total		
	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	
RDT&E																					
PROCUREMENT																					
Installation Kits																					
A Kit	14	1.5	2	0.2																	
B Kit	17	1.7			1	0.6															
C Kit	8	0.2																			
D Kit	25	7.3																			
Installation Kits N/R																					
Installation Equipment																					
XXX Equip																					
Installation Equipment N/R																					
Engineering Change Orders																					
XXX Kit ECO XXX																					
XXX Equip ECO XXX																					
Data																					
Training Equipment																					
Support Equipment																					
ILS																					
Other Support		0.3																			
Interim Contractor Support																					
Installation Cost	64		2		1																
<b>Total Procurement</b>		<b>11.0</b>		<b>0.2</b>		<b>0.6</b>															

Notes:

1. Totals may not add due to rounding
2. Asterisk indicates amount less than \$50K

**Exhibit P-3a**

MODELS OF SYSTEMS AFFECTED: T-39N,T-39G and Ground Based Training System      MODIFICATION TITLE: UMFOTS Upgrade (05-00)

INSTALLATION INFORMATION:

METHOD OF IMPLEMENTATION: Concurrent with ACI or Drop-in at CLS Depot Facility

ADMINISTRATIVE LEADTIME: 1 Months      PRODUCTION LEADTIME: 1 Months

CONTRACT DATES:      FY 2003: Nov-02      FY 2004: Nov-03      FY 2005: \_\_\_\_\_

DELIVERY DATE:      FY 2003: Dec-02      FY 2004: Dec-03      FY 2005: \_\_\_\_\_

(\$ in Millions)

Cost:	Prior Years		FY 2003		FY 2004		FY 2005		FY 2006		FY 2007		FY 2008		FY 2009		To Complete		TOTAL		
	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	
FY 2002 & PY (64) kits	64																				
FY 2003 (2) kits			2																		
FY 2004 (1) kits					1																
FY 2005 ( ) kits																					
FY 2006 ( ) kits																					
FY 2007 ( ) kits																					
FY 2008 ( ) kits																					
FY 2009 ( ) kits																					
To Complete ( ) kits																					
<b>TOTAL</b>	<b>64</b>		<b>2</b>		<b>1</b>																

Installation Schedule

	FY 2002 & Prior	FY 2003				FY 2004				FY 2005				FY 2006				FY 2007				
		1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	
In	64	1	1			1																
Out	64	1	1			1																

	FY 2007				FY 2009				To Complete	TOTAL
	1	2	3	4	1	2	3	4		
In										
Out										

Exhibit P-3a Individual Modification

MODIFICATION TITLE: T-39 Wing Replacement (OSIP 28-00)

MODELS OF SYSTEMS AFFECTED: T-39N, T-39G TYPE MODIFICATION: Safety

DESCRIPTION/JUSTIFICATION: The T-39 Aircraft is a commercial off-the-shelf aircraft utilized for training Undergraduate Military Flight Officers. The aircraft was structurally reinforced and a Supplemental Type Certificate (STC) was issued to allow the aircraft to fly within the operational envelope. The wings are rapidly approaching expiration of their fatigue life. Wing replacement is mandatory to avoid safety of flight issues. A rotational replacement of wings is required every four years under the existing operational envelope and known data. This modification provides replacement for one rotation with used wings on all 15 T-39 aircraft. This modification also incorporates Fatigue Data Recorders on the wings of 9 of the 15 T-39N aircraft that do not have Recorders already installed. The Fatigue Data Recorders will allow more effective and accurate tracking of the wing fatigue life and help to eliminate a second wing replacement in the future on some of the T-39N aircraft. An additional 8 wings were approved to be installed on the T-39G's, increasing the total number of wings to 23

DEVELOPMENT STATUS/MAJOR DEVELOPMENT MILESTONES: The wings are commercially available, non-developmental items (NDI) and will be installed during ACI by the commercial contractor. The Fatigue Data Recorders are a COTS turnkey procurement.

FINANCIAL PLAN: (TOA, \$ in Millions)

	Prior Years		FY 2003		FY 2004		FY 2005		FY 2006		FY 2007		FY 2008		FY2009		To Complete		Total		
	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	
RDT&E																					
PROCUREMENT																					
Installation Kits																					
A Kit	12	3.4	3	1.1																	
B Kit	9	0.5																			
XXX Kit																					
XXX Kit																					
Installation Kits N/R																					
Installation Equipment																					
XXX Equip																					
Installation Equipment N/R																					
Engineering Change Orders																					
XXX Kit ECO XXX				1.1																	
XXX Equip ECO XXX																					
Data		0.1																			
Training Equipment																					
Support Equipment																					
ILS																					
Other Support																					
Interim Contractor Support																					
Installation Cost	15	2.5	8	0.7	1	0.6															
<b>Total Procurement</b>	<b>21</b>	<b>6.6</b>	<b>3</b>	<b>3.0</b>		<b>0.6</b>															

- Notes:
1. Totals may not add due to rounding
  2. Asterisk indicates amount less than \$50K

**Exhibit P-3a**

MODELS OF SYSTEMS AFFECTED: T-39N, T-39G Aircraft MODIFICATION TITLE: T-39 Wing Replacement (OSIP 28-00)

INSTALLATION INFORMATION:

METHOD OF IMPLEMENTATION: Concurrent with ACI or as a Drop-in Modification at CLS Contractor Depot Facility

ADMINISTRATIVE LEADTIME: 1 Months PRODUCTION LEADTIME: 1 Months

CONTRACT DATES: FY 2003: Nov-02 FY 2004: Nov-03 FY 2005: \_\_\_\_\_

DELIVERY DATE: FY 2003: Dec-02 FY 2004: Dec-03 FY 2005: \_\_\_\_\_

(\$ in Millions)

Cost:	Prior Years		FY 2003		FY 2004		FY 2005		FY 2006		FY 2007		FY 2008		FY 2009		To Complete		TOTAL		
	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	
FY 2002 & PY (21) kits	15	2.5	6	0.5																	
FY 2003 (3) kits			2	0.2	1	0.6															
FY 2004 ( ) kits																					
FY 2005 ( ) kits																					
FY 2006 ( ) kits																					
FY 2007 ( ) kits																					
FY 2008 ( ) kits																					
FY 2009 ( ) kits																					
To Complete ( ) kits																					
<b>TOTAL</b>	<b>15</b>	<b>2.5</b>	<b>8</b>	<b>0.7</b>	<b>1</b>	<b>0.6</b>															

Installation Schedule

	FY 2002 & Prior	FY 2003				FY 2004				FY 2005				FY 2006							
		1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4				
In	15	2	2	2	2		1														
Out	15	2	2	2	2		1														

	FY 2007				FY 2008				FY 2009				To Complete	TOTAL
	1	2	3	4	1	2	3	4	1	2	3	4		
In														
Out														

Exhibit P-3a Individual Modification

MODIFICATION TITLE: T-44A Avionics Obsolescence (OSIP 05-04)

MODELS OF SYSTEMS AFFECTED: T-44A TYPE MODIFICATION: Safety

DESCRIPTION/JUSTIFICATION: The T-44A Avionics are becoming non-supportable due to non-availability of parts. The following avionics systems require replacement: NCS-31A Area Navigation/Control System, AP-106 Autopilot, Flight Director and the RDR-130 Weather Radar. Avionics are being returned from the repair vendor Beyond Economical Repair (BER) due to non-availability of parts. Spare units are not available in the commercial market. IMPACT: As avionics become BER due to lack of parts, spares will be depleted. Lack of avionics will ground aircraft and severely degrade CNATRA's ability to meet Pilot Training Requirements beginning in FY04. Current plans call for T-44 to fly its training mission until 2015. There are 55 T-44A in the inventory and all 55 will receive this modification.

DEVELOPMENT STATUS/MAJOR DEVELOPMENT MILESTONES: The T-44 Avionics Obsolescence (OSIP 05-04) to be installed will be a commercially available, Non-Development Item (NDI).

FINANCIAL PLAN: (TOA, \$ in Millions)

	Prior Years		FY 2003		FY 2004		FY 2005		FY 2006		FY 2007		FY 2008		FY2009		To Complete		Total		
	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	
RDT&E																					
PROCUREMENT																					
Installation Kits																					
A- Kit							12	5.3													
XXX Kit																					
XXX Kit																					
Installation Kits N/R					3	3.6															
Installation Equipment																					
XXX Equip																					
Installation Equipment N/R																					
Engineering Change Orders																					
XXX Kit ECO XXX																					
XXX Equip ECO XXX																					
Data						0.3															
Training Equipment					5	2.1	2	0.6													
Support Equipment																					
ILS																					
Other Support						0.4															
Interim Contractor Support																					
Installation Cost					3		12	0.7													
<b>Total Procurement</b>						<b>6.3</b>		<b>6.6</b>													

- Notes:
1. Totals may not add due to rounding
  2. Asterisk indicates amount less than \$50K

**Exhibit P-3a**

MODELS OF SYSTEMS AFFECTED: T-44A MODIFICATION TITLE: T-44A Avionics Obsolescence (OSIP 05-04)

INSTALLATION INFORMATION:

METHOD OF IMPLEMENTATION: Contractor Field Team Modification

ADMINISTRATIVE LEADTIME: 1 Months PRODUCTION LEADTIME: 1 Months

CONTRACT DATES: FY 2003: \_\_\_\_\_ FY 2004: Nov-03 FY 2005: Nov-04

DELIVERY DATE: FY 2003: \_\_\_\_\_ FY 2004: Dec-03 FY 2005: Dec-04

(\$ in Millions)

Cost:	Prior Years		FY 2003		FY 2004		FY 2005		FY 2006		FY 2007		FY 2008		FY 2009		To Complete		TOTAL		
	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	
FY 2002 & PY ( ) kits																					
FY 2003 ( ) kits																					
FY 2004 ( ) kits					3																
FY 2005 ( ) kits							12	0.7													
FY 2006 ( ) kits																					
FY 2007 ( ) kits																					
FY 2008 ( ) kits																					
FY 2009 ( ) kits																					
To Complete ( ) kits																					
<b>TOTAL</b>					<b>3</b>		<b>12</b>	<b>0.7</b>													

Installation Schedule

	FY 2002 & Prior	FY 2003				FY 2004				FY 2005				FY 2006							
		1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4				
In					1		1	1	3	3	3	3									
Out						1	1	1	2	4	3	2									

	FY 2007				FY 2008				FY 2009				To Complete	TOTAL
	1	2	3	4	1	2	3	4	1	2	3	4		
In														
Out														

Exhibit P-3a Individual Modification

MODIFICATION TITLE: USNTPS T-38 A-C Conversion (OSIP 15-04)

MODELS OF SYSTEMS AFFECTED: T-38A Supersonic Jet Trainer TYPE MODIFICATION: SAFETY/RELIABILITY

DESCRIPTION/JUSTIFICATION: The T-38A ACFT was introduced into service between 1961 and 1962 and has undergone numerous changes through the years. The Navy has allocated ten aircraft at TPS and relies heavily on the Air Force for engineering and Logistics support. At the close of FY08, the Air Force will have transitioned all of their ACFT to T-38C and the Navy will need to stand up engineering and logistics units for these unique ACFT. Due to the age of the ACFT, O&S costs will increase over the life of the ACFT. The modifications will reduce O&S costs, allow the Navy to continue to utilize engineering and logistics infrastructure of the Air Force, and provide for improved safety of the T-38 aircraft. The Navy plans to utilize the T-38 at USNTPS through 2020 and beyond. Future modifications will include improved wings and ejection seats, currently being developed by the USAF.

DEVELOPMENT STATUS/MAJOR DEVELOPMENT MILESTONES: All components and systems required for this program are being developed and tested by the USAF. No Navy unique operational testing is anticipated under this program.

FINANCIAL PLAN: (TOA, \$ in Millions)

	Prior Years		FY 2003		FY 2004		FY 2005		FY 2006		FY 2007		FY 2008		FY2009		To Complete		Total		
	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	
RDT&E																					
PROCUREMENT																					
Installation Kits																					
Ejection Seats																					
Wings																					
AUP Kits					3	1.9	4	4.2													
PMP Kits																					
Installation Kits N/R																					
Installation Equipment																					
Installation Equipment N/R																					
Engineering Change Orders																					
Data						0.2		0.2													
Training Equipment																					
Support Equipment																					
ILS																					
Other Support						0.4		0.3													
Interim Contractor Support																					
Installation Cost																					
Installation AUP					3	0.5	4	1.4													
Installation PMP																					
<b>Total Procurement</b>					3	<b>2.9</b>	4	<b>6.0</b>													

Notes:

1. Totals may not add due to rounding
2. Asterisk indicates amount less than \$50K

**Exhibit P-3a**

MODELS OF SYSTEMS AFFECTED: T-38 JET TRAINER (OSIP 15-04) MODIFICATION TITLE: AUP

INSTALLATION INFORMATION: DEPOT LEVEL

METHOD OF IMPLEMENTATION: CONCURRENT with PHASE DEPOT MAINTENANCE

ADMINISTRATIVE LEADTIME: 1 Months PRODUCTION LEADTIME: 2 Months

CONTRACT DATES: FY 2003: N/A FY 2004: Nov-03 FY 2005: Nov-04

DELIVERY DATE: FY 2003: N/A FY 2004: Dec-03 FY 2005: Dec-04

(\$ in Millions)

Cost:	Prior Years		FY 2003		FY 2004		FY 2005		FY 2006		FY 2007		FY 2008		FY 2009		To Complete		TOTAL		
	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	
FY 2002 & PY ( ) kits																					
FY 2003 ( ) kits																					
FY 2004 ( ) kits					3	0.5															
FY 2005 ( ) kits							4	1.4													
FY 2006 ( ) kits																					
FY 2007 ( ) kits																					
FY 2008 ( ) kits																					
FY 2009 ( ) kits																					
To Complete ( ) kits																					
<b>TOTAL</b>					<b>3</b>	<b>0.5</b>	<b>4</b>	<b>1.4</b>													

Installation Schedule

	FY 2002 & Prior	FY 2003				FY 2004				FY 2005				FY 2006			
		1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
In						1	1	1	1	1	1	1	1				
Out						1	1	1	1	1	1	1	1				

	FY 2007				FY 2008				FY 2009				To Complete	TOTAL
	1	2	3	4	1	2	3	4	1	2	3	4		
In														
Out														

**Exhibit P-3a**

MODELS OF SYSTEMS AFFECTED: T-38 Jet Trainer MODIFICATION TITLE: PMP

INSTALLATION INFORMATION: **DEPOT LEVEL \***  
 \* The T-38 is a twin engine aircraft. The PMP upgrade will be accomplished concurrent with Phased Depot Level Maintenance for those engines installed in the aircraft. Spare engines will also receive PMP upgrades in FY 06, FY 08 with the balance of engines to be completed in the outyears. Spare engines are reflected in the following schedule for accounting purposes, however are not to be considered as an "installation" into the A/C.

METHOD OF IMPLEMENTATION: **CONCURRENT with PHASE DEPOT MAINTENANCE**

ADMINISTRATIVE LEADTIME: 1 Months PRODUCTION LEADTIME: 3 Months

CONTRACT DATES: FY 2003: N/A FY 2004: N/A FY 2005: N/A

DELIVERY DATE: FY 2003: N/A FY 2004: N/A FY 2005: N/A

(\$ in Millions)

Cost:	Prior Years		FY 2003		FY 2004		FY 2005		FY 2006		FY 2007		FY 2008		FY 2009		To Complete		TOTAL	
	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$
FY 2002 & PY ( ) kits																				
FY 2003 ( ) kits																				
FY 2004 ( ) kits																				
FY 2005 ( ) kits																				
FY 2006 ( ) kits																				
FY 2007 ( ) kits																				
FY 2008 ( ) kits																				
FY 2009 ( ) kits																				
To Complete ( ) kits																				
TOTAL																				

Installation Schedule

FY 2002 & Prior	FY 2003				FY 2004				FY 2005				FY 2006							
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4				
In																				
Out																				

	FY 2007				FY 2008				FY 2009				To Complete	TOTAL
	1	2	3	4	1	2	3	4	1	2	3	4		
In														
Out														

**Exhibit P-3a**

Exhibit P-3a Individual Modification

MODIFICATION TITLE: T-44A OXYGEN MASK/BRAKE REPLACEMENT (OSIP 03-05)

MODELS OF SYSTEMS AFFECTED: T-44A TYPE MODIFICATION: SAFETY

DESCRIPTION/JUSTIFICATION: DESCRIPTION/JUSTIFICATION: T-44A Brake Assembly. The T-44A has experienced a large number of catastrophic brake failures (sticking/dragging) due to over temping of the brake housing and stator assembly. The OEM revealed insulator material was changed from asbestos to superimide. Lab results state that Superimide insulators contain a high amount of carbon material, which when combined with high humidity and salt air, will accelerate corrosion in the brake housing bore. There are 55 T-44A Inventory and all 55 will receive this modification. T-44A Oxygen Masks. Aviation Hazrep DTG 301751Z APR 02, T-44A Air Crew (AC) crew lost both left and right subpanel, and cockpit lighting. AC started to feel light headed due to altitude. AC went on oxygen but was unable to get headset on with oxygen mask on and selected speaker. The oxygen masks installed in the aircraft are the old style which do not fit properly with the headsets currently in use. (Headsets changed from Telex to David Clark which utilize large ear muffs to reduce engine/aircraft noise and enhance AC communication during normal operation.) C-12/TC-12 platforms are in the process of replacing their oxygen mask with a FAA approved COTS full face type. This mask could be readily used in the T-44A. There are 55 T-44A Inventory and all 55 will receive this modification.

T-44A Brake Assembly. The T-44A has experienced a large number of catastrophic brake failures (sticking/dragging) due to over temping of the brake housing and stator assembly. The OEM revealed insulator material was changed from asbestos to superimide. Lab results state that Superimide insulators contain a high amount of carbon material, which when combined with high humidity and salt air, will accelerate corrosion in the brake housing bore. There are 55 T-44A Inventory and all 55 will receive this modification.

DEVELOPMENT STATUS/MAJOR DEVELOPMENT MILESTONES: The Oxygen Masks and Brakes to be installed will be a commercially available, Non-Development Item (NDI).

FINANCIAL PLAN: (TOA, \$ in Millions)

	Prior Years		FY 2003		FY 2004		FY 2005		FY 2006		FY 2007		FY 2008		FY2009		To Complete		Total		
	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	
RDT&E																					
PROCUREMENT																					
Installation Kits																					
Oxygen Mask							52	0.8													
Brake							52	0.2													
Installation Kits N/R																					
Oxygen Mask							3	0.1													
Brake							3	0.1													
Installation Equipment																					
Installation Equipment N/R																					
Engineering Change Orders																					
Data								0.1													
Training Equipment																					
Support Equipment																					
ILS																					
Other Support																					
Interim Contractor Support																					
Installation Cost							104	0.1													
<b>Total Procurement</b>							<b>110</b>	<b>1.4</b>													

Notes:

1. Totals may not add due to rounding
2. Asterisk indicates amount less than \$50K
3. Quantity of 6 stated in FY05 will be installed as turnkey, therefore installation costs are not necessary.

Exhibit P-3a  
 MODELS OF SYSTEMS AFFECTED: T-44A MODIFICATION TITLE: T-44A OXYGEN MASK/BRAKE REPLACEMENT (OSIP 03-05)

INSTALLATION INFORMATION:

METHOD OF IMPLEMENTATION: CONTRACTOR FIELD MOD TEAM

ADMINISTRATIVE LEADTIME: 1 Months PRODUCTION LEADTIME: 1 Months

CONTRACT DATES: FY 2003: \_\_\_\_\_ FY 2004: \_\_\_\_\_ FY 2005: NOV-04

DELIVERY DATE: FY 2003: \_\_\_\_\_ FY 2004: \_\_\_\_\_ FY 2005: DEC-04

(\$ in Millions)

Cost:	Prior Years		FY 2003		FY 2004		FY 2005		FY 2006		FY 2007		FY 2008		FY 2009		To Complete		TOTAL		
	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	
FY 2002 & PY ( ) kits																					
FY 2003 ( ) kits																					
FY 2004 ( ) kits																					
FY 2005 (104) kits							104	0.1													
FY 2006 ( ) kits																					
FY 2007 ( ) kits																					
FY 2008 ( ) kits																					
FY 2009 ( ) kits																					
To Complete ( ) kits																					
<b>TOTAL</b>							<b>104</b>	<b>0.1</b>													

Installation Schedule

FY 2002 & Prior	FY 2003				FY 2004				FY 2005				FY 2006			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
In									26	26	26	26				
Out									26	26	26	26				

	FY 2007				FY 2008				FY 2009				To Complete	TOTAL
	1	2	3	4	1	2	3	4	1	2	3	4		
In														
Out														

**Exhibit P-3a Individual Modification**

MODIFICATION TITLE: Trainer Legacy Aircraft, Federal Aviation Administration (FAA) Configuration, Update, and Operational Improvements (OSIP 06-05)

MODELS OF SYSTEMS AFFECTED: TC-12/T-34C/T-44A/T-2C/T-39/TH57 TYPE MODIFICATION: Safety/Reliability/Maintainability

DESCRIPTION/JUSTIFICATION: Federal Aviation Regulations require manufacturers of commercial aircraft and associated systems/subsystems to investigate discrepant conditions, failures, and potential safety problems reported by all operators. The results of these investigations with recommended corrective action are reviewed/approved by the FAA and Navy and provided to all operators as service bulletins. Each service bulletin is a complete technical directive that provides corrective change information or detailed modification instructions. Compliance with many of these FAA bulletins is mandatory to ensure safe, reliable, FAA/Navy certified aircraft and continued flight operations. The Navy must maintain configuration and integrity compatible with FAA certified commercial models by incorporation of applicable service bulletins even when they emerge during the year of execution. The incorporation of certain service bulletins also serves to preclude extensive repairs/repetitive inspections. Crew equipment requirements in accordance with FAA directives and Navy requirements will be incorporated to ensure maximum safety in case of emergency. Specific modifications budgeted in this OSIP include the incorporation of TC-12B, T-34C, T-39G/N, T-44A, T-2C and TH-57B/C FAA Bulletins and Safety of Flight Navy Directives. Specific examples of components that will require modification to conform to FAA bulletins and directives: oxygen masks, brakes, wing wiring, attenuating seats, exceedence warning, flap actuators, UHF/VHF radios, GPS, Mode S Transponder, Traffic Avoidance System, and Landing Gear.

DEVELOPMENT STATUS/MAJOR DEVELOPMENT MILESTONES: Applicable FAA data (Supplemental Type Certificates, Service Bulletins and Airworthiness Directives) is reviewed for possible incorporation on an as required basis. All data is previously approved and verified by the FAA.

FINANCIAL PLAN: (TOA, \$ in Millions)

	Prior Years		FY 2003		FY 2004		FY 2005		FY 2006		FY 2007		FY 2008		FY2009		To Complete		Total		
	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	
RDT&E																					
PROCUREMENT																					
Installation Kits																					
T-2C							23	*													
TC-12B							21	*													
T-34C							309	*													
T-39G/N							23	*													
T-44A							55	*													
TH-57B/C							120	*													
Installation Kits N/R																					
Installation Equipment																					
XXX Equip																					
Installation Equipment N/R																					
Engineering Change Orders																					
XXX Kit ECO XXX																					
XXX Equip ECO XXX																					
Data																					
Training Equipment																					
Support Equipment																					
ILS																					
Other Support																					
Interim Contractor Support																					
Total Installation Cost							551	*													
<b>Total Procurement</b>							<b>551</b>	<b>0.1</b>													

- Notes:  
 1. Totals may not add due to rounding  
 2. Asterisk indicates amount less than \$50K

**Exhibit P-3a**

MODELS OF SYSTEMS AFFECTED: T-2C/TC-12/T-34C/T-44A/T-39/TH-57      MODIFICATION TITLE: Trainer Legacy Aircraft, Federal Aviation Administration (FAA) Update, and Correction of Deficiencies (OSIP 06-05)

INSTALLATION INFORMATION:

METHOD OF IMPLEMENTATION: Contractor Depot

ADMINISTRATIVE LEADTIME: Various Months      PRODUCTION LEADTIME: Various Months

CONTRACT DATES:      FY 2003: Various      FY 2004: Various      FY 2005: Various

DELIVERY DATE:      FY 2003: Various      FY 2004: Various      FY 2005: Various

(\$ in Millions)

Cost:	Prior Years		FY 2003		FY 2004		FY 2005		FY 2006		FY 2007		FY 2008		FY 2009		To Complete		TOTAL		
	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	
FY 2002 & PY ( ) kits																					
FY 2003 ( ) kits																					
FY 2004 ( ) kits																					
FY 2005 ( ) kits							551	*													
FY 2006 ( ) kits																					
FY 2007 ( ) kits																					
FY 2008 ( ) kits																					
FY 2009 ( ) kits																					
To Complete ( ) kits																					
<b>TOTAL</b>							<b>551</b>	<b>*</b>													

Installation Schedule

	FY 2002 & Prior	FY 2003				FY 2004				FY 2005				FY 2006				FY 2007				
		1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	
In										137	137	137	140									
Out										137	137	137	140									

	FY 2008				FY 2009				To Complete	TOTAL
	1	2	3	4	1	2	3	4		
In										
Out										

Exhibit P-40, BUDGET ITEM JUSTIFICATION					DATE: February 2004						
APPROPRIATION/BUDGET ACTIVITY				P-1 ITEM NOMENCLATURE							
Aircraft Procurement, Navy/APN-5 Aircraft Modifications				C-2A(R) Series Modification							
Program Element for Code B Items:				Other Related Program Elements							
	Prior Years	ID Code	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	Complete	To Total
QTY											
COST (In Millions)	173.0	A	28.8	35.1	29.6	28.4	25.7	26.1	19.6	49.3	415.6
<p>This line item funds modifications to 36 C-2A(R) aircraft. The C-2A(R) Greyhound is a high wing monoplane, twin engine turbo-prop aircraft capable of operating from both a shore base and all operational USN aircraft carrier classes. The mission of the C-2A(R) is to provide rapid response Carrier Onboard Delivery (COD) of fleet essential supplies, repair parts, and personnel to sustain at sea operations of deployed battle groups. In addition, the C-2A(R) provides airdrop delivery and mobilization support for special operations forces from land bases and carriers. The overall goal of the modifications in FY 2004 is to continue initial procurement efforts for the C-2A(R) Service Life Extension Program (SLEP). The design service life of the C-2A(R) is 10,000 flight hours with 15,000 landings. The service life remaining on the aircraft is 4,000 flight hours with 4,800 landings.</p>											
(TOA, \$ in Millions)											
OSIP No.	Description	*Prior Years	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	Complete	To Total
24-94	C-2A SLEP	173.0	28.8	35.1	29.6	28.4	25.7	26.1	19.6	49.3	415.6
	DERF (Non-Add)	1.7									1.7
	<b>Total</b>	173.0	28.8	35.1	29.6	28.4	25.7	26.1	19.6	49.3	415.6
<p>Note: Totals may not add due to rounding.            * For non-add Defense Emergency Response Funds (DERF) was received in FY02 in the amount of \$1.7M in subhead 4A04 to procure qty (2) rewire kits. Funding has been obligated as of 25 March 2002.            ** For DERF received in FY02 as part of subhead Y5C2 : \$3M was received to procure and install 1 structure kit and 2 Interim AFC kits.</p>											

Exhibit P-3a		Individual Modification																			
MODIFICATION TITLE:		C-2A(R) Blk Upgrade/Service Life Extension Program (OSIP 24-94)																			
MODELS OF SYSTEMS AFFECTED:		C-2A(R) Aircraft									TYPE MODIFICATION: SAFETY/SLEP										
DESCRIPTION/JUSTIFICATION:		<p>In accordance with ORD 352-88-94 the C-2A(R) Block Upgrade/SLEP will permit extended operations of the total active inventory of 36 aircraft providing the Navy's Carrier Onboard Delivery (COD) beyond its current projected service life. It will also provide for the installation of avionics systems required to improve performance and preclude obsolescence during the extended life of this critical Fleet asset. One C-2A(R) has reached 100% of fatigue life in FY00 and over three quarters of the aircraft will be grounded by CY09. This OSIP will ensure that the impact on COD operations is minimized. Usage analyses under a Full Scale Fatigue Test shows that airframe structural life including that of Outer Wing Panels (OWPs) will be less than designed life. This OSIP will provide for OWP structural Airframe Change (AFC) enhancements. In addition to the service life structural changes, this upgrade will replace and/or install systems and components (L-Probe/VSI, CAINS II, ARC-210 radios, full face O2 mask, and aircraft wiring) which are documented deficiencies as noted in the final C-2A(R) INSURV report. It is planned that the CAINS II modification will be installed on an accelerated basis in advance of the other SLEP changes. FY00 has been increased by \$6.0K by Congress in support of the new 8 blade propeller. N88 funded the procurement and the installation of the 8 blade propeller beginning in FY 2002. Incorporation of the NP2000 will eliminate the top three readiness degraders and one of the highest AVDLR cost components on the C-2A. The new Interim AFC requirement in FY01 was directed by the resource sponsor(N88). Based on results of the Full Scale Fatigue Test, it was determined that the C-2(R) would fall 5 aircraft below the designated Primary Aircraft Authorization(PAA) of 29 aircraft. The Interim AFC mod will change the engine nacelle, wingfold rib, injections ports and horizontal slab of five (5) aircraft to satisfy the PAA. This OSIP includes \$1.7M in FY02 DERF funding to procure two rewire kits. Install funding increase from FY03 to FY04 is driven by a change in the mix of kits being installed on the aircraft. Rewire Program endured technical difficulties; therefore, the program moved 2 years. Procurement of new kits start in FY06</p> <p>DEVELOPMENT STATUS/MAJOR DEVELOPMENT MILESTONES: Development and operational testing (DT and OT) have been completed for the avionics systems included in this OSIP. DT and OT of the various modifications for the SLEP systems in the C-2A(R) began in FY 1997 and will complete in FY 2005. The Congressional plus-up in FY 2000 for the new 8 blade propeller will provide a program flying analyses, propeller system design, an engine structural load fatigue analysis, and a control system analysis by late FY03.</p>																			
FINANCIAL PLAN: (TOA, \$ in Millions)																					
	Prior Years		FY 2003		FY 2004		FY 2005		FY 2006		FY 2007		FY 2008		FY 2009		To Complete		Total		
	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	
RDT&E																					
PROCUREMENT																					
Installation Kits																					
L-Probe Kit	36	0.3																			
CAINS II A Kit	36	2.3																			
ARC-210 Kit	18	1.5	9	0.7	8	0.8															
Rewire Kit	4	4.6	4	3.6																	
DERF Rewire Kit	2	1.7																			
Structure Kit	4	1.7	4	1.7	4	1.7	4	1.8													
DERF Structure Kit	1	0.4																			
O2 Mask Kit																					
Interim AFC	5	0.3																			
Interim AFC - DERF	2	0.1																			
Enhanced OWP Kit	4	10.8																			
OWP Enhancement Kit	22	5.0	10	2.4	7	1.9	10	2.4													
OWP Conversion Kit	17	2.5	2	0.3																	
NP-2000			2	1.3	4	2.2	5	3.9													
Installation Kits N/R		19.0		3.6		3.1		3.2													
Installation Equipment CAINS II	50	6.1																			
Installation Equipment N/R		4.2																			
Engineering Change Orders																					
Data		9.3		0.5																	
Training Equipment		4.4		0.4		1.7															
Support Equipment		0.8		0.4		0.5															
ILS		4.2		0.4		1.1		0.7													
Other Support		79.8		6.5		9.4		4.8													
Interim Contractor Support																					
Installation Cost	111	15.7	23	7.1	23	12.7	29	12.8													
<b>Total Procurement</b>		<b>174.7</b>		<b>28.8</b>		<b>35.1</b>		<b>29.6</b>													

Notes:

- Totals may not add due to rounding
- Enhanced OWP Kit and OWP Conversion Kit installed by fleet.
- Defense Emergency Response Funds (DERF) funding was received in FY02 in the amount of \$1.7M to procure qty (2) rewire kits. Funding has been obligated as of 25 March 2002.
- 4 of the 26 installation quantities for FY 02 were funded with DERF.

**Exhibit P-3a**

MODELS OF SYSTEMS AFFECTED: C-2A(R) MODIFICATION TITLE: Block Upgrade/SLEP (OSIP 24-94) - ARC-210 Radios

INSTALLATION INFORMATION:

METHOD OF IMPLEMENTATION: Navy Field Modification Team (FMT)

ADMINISTRATIVE LEADTIME: 3 Months PRODUCTION LEADTIME: 9 Months

CONTRACT DATES: FY 2003: Jan-03 FY 2004: Jan-04 FY 2005: \_\_\_\_\_

DELIVERY DATE: FY 2003: Oct-03 FY 2004: Oct-04 FY 2005: \_\_\_\_\_

(\$ in Millions)

Cost:	Prior Years		FY 2003		FY 2004		FY 2005		FY 2006		FY 2007		FY 2008		FY 2009		To Complete		TOTAL	
	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$
FY 2002 & PY ( 18 ) kits	7	0.5	10	0.7			1	0.1											18	1.3
FY 2003 (9) kits					9	0.7													9	0.7
FY 2004 (8) kits							8	0.6											8	0.6
FY 2005 ( ) kits																				
FY 2006 ( ) kits																				
FY 2007 ( ) kits																				
FY 2008 ( ) kits																				
FY 2009 ( ) kits																				
To Complete ( ) kits																				
<b>TOTAL</b>	<b>7</b>	<b>0.5</b>	<b>10</b>	<b>0.7</b>	<b>9</b>	<b>0.7</b>	<b>9</b>	<b>0.7</b>											<b>35</b>	<b>2.6</b>

Installation Schedule

	FY 2002 & Prior	FY 2003				FY 2004				FY 2005				FY 2006						
		1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4			
In	8	10			5	4			4	4										
Out	7	10			5	4			5	4										

	FY 2007				FY 2008				FY 2009				To Complete	TOTAL
	1	2	3	4	1	2	3	4	1	2	3	4		
In														35
Out														35

Exhibit P-3a

MODELS OF SYSTEMS AFFECTED: C-2A(R) MODIFICATION TITLE: Block Upgrade/SLEP (OSIP 24-94) - Structures

INSTALLATION INFORMATION:

METHOD OF IMPLEMENTATION: Current w/SLM

ADMINISTRATIVE LEADTIME: 1 Months PRODUCTION LEADTIME: 14 Months

CONTRACT DATES: FY 2003: Oct-02 FY 2004: Oct-03 FY 2005: Oct-04

DELIVERY DATE: FY 2003: Dec-03 FY 2004: Dec-04 FY 2005: Dec-05

Cost:	Prior Years		FY 2003		FY 2004		FY 2005		FY 2006		FY 2007		FY 2008		FY 2009		To Complete		TOTAL	
	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$
FY 2002 & PY (4) kits *	2	3.7	2	3.8																
FY 2002 (1) kit - DERF **			1	2.1																
FY 2003 (4) kits					4	7.7														
FY 2004 (4) kits							4	7.9												
FY 2005 (4) kits																				
FY 2006 (4) kits																				
FY 2007 (4) kits																				
FY 2008 (4) kits																				
FY 2009 (4) kits																				
To Complete (2) kits																				
<b>TOTAL</b>	<b>2</b>	<b>3.7</b>	<b>3</b>	<b>5.9</b>	<b>4</b>	<b>7.7</b>	<b>4</b>	<b>7.9</b>												

\* 2 Structures kits were delivered 8 months after award of the FY 2002 contract award.

\*\* 1 structure kit procured with DERF in SLEP subhead Y5C2.

FY2002 & Prior	FY 2003				FY 2004				FY 2005				FY 2006			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
In	2		3			2	2				2	2				
Out	2		3			2	2				2	2				

In	FY 2007				FY 2008				FY 2009				To Complete	TOTAL	
	1	2	3	4	1	2	3	4	1	2	3	4			
Out															

Exhibit P-3a

MODELS OF SYSTEMS AFFECTED: C-2A(R) MODIFICATION TITLE: Block Upgrade/SLEP (OSIP 24-94) - Rewire

INSTALLATION INFORMATION:

METHOD OF IMPLEMENTATION: Current w/SDLM

ADMINISTRATIVE LEADTIME: 1 Months PRODUCTION LEADTIME: 14 Months

CONTRACT DATES: FY 2003: Oct-02 FY 2004: \_\_\_\_\_ FY 2005: \_\_\_\_\_

DELIVERY DATE: FY 2006: Dec-05 FY 2004: \_\_\_\_\_ FY 2005: \_\_\_\_\_

Cost:	Prior Years		FY 2003		FY 2004		FY 2005		FY 2006		FY 2007		FY 2008		FY 2009		To Complete		TOTAL		
	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	
FY 2002 & PY (4) kits *					2	2.5															
FY 2002 (2) kit - DERF **							2	1.3													
FY 2003 (4) kits																					
FY 2004 (0) kits																					
FY 2005 (0) kits																					
FY 2006 (4) kits																					
FY 2007 (4) kits																					
FY 2008 (4) kits																					
FY 2009 (4) kits																					
To Complete (11 ) kits																					
TOTAL					2	2.5	2	1.3													

\* 2 of 4 kits no longer reflect current design and cannot be used. Funding still required to install 2 of 4 kits in FY04. Cost in FY04 is due to the engineering efforts for the Validation/Verification

\*\* 2 Rewire kits were procured with DERF in subhead 4A04.

FY2002 & Prior	FY 2003				FY 2004				FY 2005				FY 2006			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
In						2					2					
Out						2						2				

In	FY 2007				FY 2008				FY 2009				To Complete	TOTAL	
	1	2	3	4	1	2	3	4	1	2	3	4			
Out															



Exhibit P-3a

MODELS OF SYSTEMS AFFECTED: C-2A(R) MODIFICATION TITLE: Block Upgrade/SLEP (OSIP 24-94) - NP-2000

INSTALLATION INFORMATION:

METHOD OF IMPLEMENTATION: Current w/SDLMDrive in Mod

ADMINISTRATIVE LEADTIME: 1 Months PRODUCTION LEADTIME: 12 Months

CONTRACT DATES: FY 2003: Oct-02 FY 2004: Oct-03 FY 2005: Oct-04

DELIVERY DATE: FY 2003: Oct-03 FY 2004: Oct-04 FY 2005: Oct-05

Cost:	Prior Years		FY 2003		FY 2004		FY 2005		FY 2006		FY 2007		FY 2008		FY 2009		To Complete		TOTAL		
	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	
FY 2002 & PY ( ) kits																					
FY 2003 (2) kits			1	0.1	1	0.1															
FY 2004 (4) kits							4	0.3													
FY 2005 (5) kits																					
FY 2006 (8) kits																					
FY 2007 (6) kits																					
FY 2008 ( ) kits																					
FY 2009 ( ) kits																					
To Complete (10) kits																					
TOTAL			1	0.1	1	0.1	4	0.3													

Installation Schedule

FY 2002 & Prior	FY 2003				FY 2004				FY 2005				FY 2006			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
In	1				1				2	2						
Out			1				1			2	2					

	FY 2007				FY 2008				FY 2009				To Complete	TOTAL
	1	2	3	4	1	2	3	4	1	2	3	4		
In														
Out														

Exhibit P-40, BUDGET ITEM JUSTIFICATION							DATE: February 2004																												
APPROPRIATION/BUDGET ACTIVITY Aircraft Procurement, Navy/APN-5 Aircraft Modifications							P-1 ITEM NOMENCLATURE C-130 SERIES																												
Program Element for Code B Items:							Other Related Program Elements																												
	Prior Years	ID Code	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	To Complete	Total																								
QTY		A																																	
COST (In Millions)	46.5	A	6.2	7.5	15.4	21.6	33.2	28.7	29.7	97.4	286.0																								
<p>This item funds modifications to C/KC-130 aircraft. The Lockheed C/KC-130 aircraft is a four engine, high-wing, all metal, long range, land based monoplane capable of all weather transport of cargo or personnel and in-flight refueling. There are currently 98 aircraft in the Navy and Marine Corps inventory (50 active and 48 reserve). The expected Service Life is as follows:</p> <table border="1"> <thead> <tr> <th>T/M/S</th> <th>Service Date</th> <th>Service Life</th> <th>Expected Life</th> </tr> </thead> <tbody> <tr> <td>C-130T</td> <td>10/91 - 11/95</td> <td>450 mos.</td> <td>2028-2032</td> </tr> <tr> <td>KC-130F</td> <td>3/60 - 11/62</td> <td>504 mos.</td> <td>2002-2008</td> </tr> <tr> <td>KC-130R</td> <td>9/75 - 6/78</td> <td>432 mos.</td> <td>2011-2014</td> </tr> <tr> <td>KC-130T</td> <td>4/84 - 2/96</td> <td>450 mos.</td> <td>2021-2033</td> </tr> <tr> <td>TC-130G</td> <td>1/64</td> <td>216 mos.</td> <td>1982-TBD</td> </tr> </tbody> </table>												T/M/S	Service Date	Service Life	Expected Life	C-130T	10/91 - 11/95	450 mos.	2028-2032	KC-130F	3/60 - 11/62	504 mos.	2002-2008	KC-130R	9/75 - 6/78	432 mos.	2011-2014	KC-130T	4/84 - 2/96	450 mos.	2021-2033	TC-130G	1/64	216 mos.	1982-TBD
T/M/S	Service Date	Service Life	Expected Life																																
C-130T	10/91 - 11/95	450 mos.	2028-2032																																
KC-130F	3/60 - 11/62	504 mos.	2002-2008																																
KC-130R	9/75 - 6/78	432 mos.	2011-2014																																
KC-130T	4/84 - 2/96	450 mos.	2021-2033																																
TC-130G	1/64	216 mos.	1982-TBD																																
(TOA, \$ in Millions)																																			
OSIP No.	Description	Prior Years	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	Complete	To Total																								
002-92	ARC-210 RADIO SYSTEM	8.8	1.9	3.0	3.0	0.6					17.3																								
009-94	NIGHT VISION LIGHTING (NVL)	8.2	3.5	0.2	1.0						12.9																								
019-98	SAFETY IMPROVEMENT PGM (SIP)	29.4	0.7								30.1																								
011-03	ONS REPLACEMENT		0.2	1.1	0.8						2.1																								
013-04	AVIONICS MODERNIZATION PGM			2.2	10.6	21.0	33.2	28.7	29.7	68.9	194.2																								
021-04	Electronic Propeller Control System (EPCS)			1.0						28.5	29.5																								
	<b>Total</b>	<b>46.5</b>	<b>6.2</b>	<b>7.5</b>	<b>15.4</b>	<b>21.6</b>	<b>33.2</b>	<b>28.7</b>	<b>29.7</b>	<b>97.4</b>	<b>286.0</b>																								
	Reserve funding included in total		1.9	0.3	2.6	11.3	20.5	32.4	27.9	28.9																									
<b>Note: Totals may not add due to rounding.</b>																																			

Exhibit P-3a Individual Modification

MODIFICATION TITLE: AN/ARC-210 RADIO (OSIP 02-92)

MODELS OF SYSTEMS AFFECTED: C-130T, KC-130F/R/T TYPE MODIFICATION: Performance Enhancement HONA Category C)

DESCRIPTION/JUSTIFICATION: The AN/ARC-210 is a combination UHF/VHF, AM/FM jam-resistant radio that was developed to allow for Electronic Protection (EP) interoperability with the Air Force, Army and NATO. The radio provides dual UHF capability for CV based TACAIR; VHF FM for close air support and maritime channels; VHF AM for air traffic control; and EP capabilities using the Air Force developed waveforms (UHF-AM HAVEQUICK I and II), and the Army developed waveform (VHF-FM SINCGARS). The AN/ARC-210 can be controlled by either a remote control unit or via a MIL-STD-1553 multiplex data bus. The EP parameters and single channel preset information can be loaded via a CYZ-10 Data Transfer Device (DTD). The fill information can consist of word-of-day for HAVEQUICK; the KGV-10 transec variable, hopsets and frequency lock-out tables for SINCGARS. Baseline for this program is GPS (OSIP 25-92). This modification is covered by a singular ECP (C-130-99) and will be incorporated in 38 C-130 aircraft (12 active and 26 reserve). PMA209 funded the 2 validation/verification kits and installs. PMA209's ARC-210 OSIP covers 21 recurring kits. This OSIP covers the remaining 16 kits and 36 aircraft installs plus the 21 retrofit kits with installs. This modification was approved 20 Apr 93, ORD 333-06-093.

DEVELOPMENT STATUS/MAJOR DEVELOPMENT MILESTONES: The AN/ARC-210 radio replaces the AN/ARC-159 radios in the C-130 aircraft. Validation/verification was performed during FY 1994-FY 1996. FOT&E was performed in FY97 for the KC-130F and KC-130R configurations. Recurring production installations started in April 1997. The previous program plan called for 91 total aircraft (77 to be equipped with 1556 radios and 14 aircraft to be equipped with 1794C radios that were SATCOM capable). Reduction in quantity from 91 to 84 was based on the plan to retire KC-130F aircraft as they are replaced by KC-130J aircraft. Changes in the technical requirements for SATCOM capability have caused us to alter the program and install the 1794C in all aircraft. OSIP had been changed to reflect SATCOM incorporation in all 84 aircraft (of which four were to be funded under a Common Avionics OSIP). Twenty-one aircraft previously modified will have to be retrofitted with the 1794C capability (The 21 reflects the 1556 kits acquired in FY98 and prior). Delays in completing OT has delayed recurring installs until 1st Quarter FY04. Quantity of affected aircraft has been further reduced from 84 to 38 (12 Active and 26 Reserve) due to the increased numbers of KC-130J aircraft and the start of the AMP program (OSIP 13-04) in FY04.

	Prior Years		FY 2003		FY 2004		FY 2005		FY 2006		FY 2007		FY 2008		FY2009		To Complete		Total		
	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	
RDT&E																					
PROCUREMENT																					
Installation Kits																					
A Kit	33	2.4			4	0.5															
CDNU Components	8	0.6	6	0.7	18	1.7	8	0.8													
Installation Kits N/R		1.5																			
Installation Equipment	2	0.4																			
Installation Equipment N/R																					
Engineering Change Orders																					
Data		0.2			0.2		0.1														
Training Equipment	1	*																			
Support Equipment		0.1																			
ILS		0.2																			
Other Support		1.5		1.1	0.1		0.3														
Interim Contractor Support																					
Installation Cost	25	1.9	1	0.1	4	0.4	21	1.8													
<b>Total Procurement</b>		<b>8.8</b>		<b>1.9</b>		<b>3.0</b>		<b>3.0</b>													

- Notes:  
 1. Totals may not add due to rounding  
 2. Asterisk indicates amount less than \$50K

**Exhibit P-3a**

MODELS OF SYSTEMS AFFECTED: C-130T, KC-130F/R/T MODIFICATION TITLE: AN/ARC-210 ECCM RADIO (OSIP 02-92)

INSTALLATION INFORMATION:

METHOD OF IMPLEMENTATION: Installation will be accomplished by Commercial FMT (2 radios per aircraft).

ADMINISTRATIVE LEADTIME: 3 Months PRODUCTION LEADTIME: 6 Months

CONTRACT DATES: FY 2003: \_\_\_\_\_ FY 2004: Dec-03 FY 2005: Dec-04

DELIVERY DATE: FY 2003: \_\_\_\_\_ FY 2004: Jun-04 FY 2005: Jun-05

(\$ in Millions)

Cost:	Prior Years		FY 2003		FY 2004		FY 2005		FY 2006		FY 2007		FY 2008		FY 2009		To Complete		TOTAL		
	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	
FY 2002 & PY ( ) kits	25	1.9	1	0.1	4	0.4	2	0.2													
FY 2003 ( ) kits																					
FY 2004 ( ) kits							19	1.6													
FY 2005 ( ) kits																					
FY 2006 ( ) kits																					
FY 2007 ( ) kits																					
FY 2008 ( ) kits																					
FY 2009 ( ) kits																					
To Complete ( ) kits																					
<b>TOTAL</b>	<b>25</b>	<b>1.9</b>	<b>1</b>	<b>0.1</b>	<b>4</b>	<b>0.4</b>	<b>21</b>	<b>1.8</b>													

NOTE: One of the 33 kits purchased in prior years will not be installed due to the change in radio configuration. The kit will be used for the Software Integration Laboratory.  
 PMA209 bought and installed 1F and 1R retro kits in FY94  
 PMA209 is buying 21 install kits in FY04.  
 Totals may not add due to rounding

Installation Schedule

	FY 2002 & Prior	FY 2003				FY 2004				FY 2005				FY 2006				FY 2007				
		1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	
In	25				1		1	2	1		7	7	7									
Out	23	2				1		1	2	1		7	7	7								

	FY 2008				FY 2009				To Complete	TOTAL
	1	2	3	4	1	2	3	4		
In										
Out										

Exhibit P-3a Individual Modification

MODIFICATION TITLE: KC-130 NIGHT VISION LIGHTING (NVL) (OSIP 09-94)

MODELS OF SYSTEMS AFFECTED: KC-130F/R/T and OPS Trainer TYPE MODIFICATION: Performance Enhancement (HONA Category C)

DESCRIPTION/JUSTIFICATION: The KC-130 has no NVL capability to support flight operations to accomplish tactical missions at night. The lack of NVL capability creates significant interoperability problems with other Night Vision Display (NVD) capable aircraft. Incorporation of a non-developmental NVL system, that has been prepared for other USMC/USAF tactical aircraft and is compatible with KC-130 tactical missions and avionics, will alleviate this critical shortfall and allow the accomplishment of tactical missions without unnecessarily jeopardizing the crew's safety and the safety of the aircraft. This modification will allow C-130 aircraft to navigate visually at night at low altitudes (using night vision and rear vision devices), aerial refuel at night with Night Vision Goggle (NVG) capable receivers, conduct clandestine (NVD only) tactical landings and takeoffs from austere sites, conduct ground refueling (using rapid ground refueling pods) and air-landed support operations. This modification is covered by a singular ECP and will be incorporated in 16 aircraft.

DEVELOPMENT STATUS/MAJOR DEVELOPMENT MILESTONES: The initial in-production engineering change proposal to incorporate non-developmental NVL in USMCR KC-130T aircraft was funded with NG&RE. Design/development of retrofit aircraft affected by this OSIP was originally based on the KC-130T NG&RE program. Development commenced in FY 1994 with procurement of two trial kits that were installed in FY 1995. Funding constraints delayed continuation of this program. Limited funds were required in FY97/98 to provide Maintenance Plans, pubs, and other logistics support for the aircraft already fielded. A competed contract was awarded in FY00 that allowed us to restart this program with non-recurring engineering, kit manufacture, and installation. First four recurring kits were purchased in FY00 and one val/ver install was completed. Technical difficulties during the install delayed DT and the remaining FY00 installs. Two additional val/ver installs were completed in FY01. The last val/ver install was completed in FY02 with recurring installs to begin FY03. The quantity of aircraft affected by this OSIP has been reduced from 24 to 16 (12 Active and 4 Reserve) due to the start of the Avionics Modernization Program (AMP) program (OSIP 13-04).

FINANCIAL PLAN: (TOA, \$ in Millions)

	Prior Years		FY 2003		FY 2004		FY 2005		FY 2006		FY 2007		FY 2008		FY2009		To Complete		Total		
	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	
RDT&E																					
PROCUREMENT																					
Installation Kits																					
Kit	10	3.7	4	1.4			2	0.8													
Installation Kits N/R		1.8		0.4																	
Installation Equipment		0.3																			
Equip																					
Installation Equipment N/R																					
Engineering Change Orders																					
Data		0.1		0.1		0.1															
Training Equipment		0.1																			
Support Equipment		*																			
ILS		0.2		*																	
Other Support		0.5		0.4		*		*													
Interim Contractor Support																					
Installation Cost	6	1.5	8	1.2			2	0.2													
<b>Total Procurement</b>		<b>8.2</b>		<b>3.5</b>		<b>0.2</b>		<b>1.0</b>													

- Notes:
1. Totals may not add due to rounding
  2. Asterisk indicates amount less than \$50K

Exhibit P-3a

MODELS OF SYSTEMS AFFECTED: KC-130F, KC-130R, KC-130T, trainer MODIFICATION TITLE: Night Vision Lighting (NVL) (OSIP 09-94)

INSTALLATION INFORMATION:

METHOD OF IMPLEMENTATION: Installation will be accomplished by Contractor Field Mod Team

ADMINISTRATIVE LEADTIME: 3 Months PRODUCTION LEADTIME: 7 Months

CONTRACT DATES: FY 2003: Dec-02 FY 2004: \_\_\_\_\_ FY 2005: Dec-04

DELIVERY DATE: FY 2003: Jul-03 FY 2004: \_\_\_\_\_ FY 2005: Jul-05

(\$ in Millions)

Cost:	Prior Years		FY 2003		FY 2004		FY 2005		FY 2006		FY 2007		FY 2008		FY 2009		To Complete		TOTAL	
	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$
FY 2002 & PY ( ) kits	6	1.5	4	0.6																
FY 2003 ( ) kits			4	0.6																
FY 2004 ( ) kits																				
FY 2005 (2) kits							2	0.2												
FY 2006 ( ) kits																				
FY 2007 ( ) kits																				
FY 2008 ( ) kits																				
FY 2009 ( ) kits																				
To Complete ( ) kits																				
<b>TOTAL</b>	<b>6</b>	<b>1.5</b>	<b>8</b>	<b>1.2</b>			<b>2</b>	<b>0.2</b>												

Installation Schedule

	FY 2002	FY 2003				FY 2004				FY 2005				FY 2006				FY 2007				
	& Prior	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	
In	6		3	3	2							1	1									
Out	6			3	3	2							1									

	FY 2008				FY 2009				To Complete	TOTAL
	1	2	3	4	1	2	3	4		
In										
Out										

Exhibit P-3a Individual Modification

MODIFICATION TITLE: SAFETY IMPROVEMENT PROGRAM (OSIP 19-98)

MODELS OF SYSTEMS AFFECTED: C-130T,KC-130F/R/T, TC-130G, TRAINERS TYPE MODIFICATION: Safety (HONA Category A)

DESCRIPTION/JUSTIFICATION: This OSIP represents several safety related modifications to various C-130 aircraft.

- Bleed Air Ducts/Overheat Detection System (ODS). During FY98, a modification was begun to replace critical bleed air ducts and install an improved Overheat Detection System. The bleed air system uses high pressure and high temperature bleed air from the compressor of all engines to pressurize the fuselage, provide heating and air conditioning, remove ice from the wings and tail section, and many other uses. Bleed air duct failures are the top emerging hazard to safe operations of C/KC-130 aircraft in the Department of the Navy. Leaks in the system, often undetected, can cause severe heat damage. This modification replaces bleed air ducts in 61 older aircraft (51 active and 10 reserve), using inconel ducts wherever available. To identify potential failures, this modification also installs an improved overheat detection system in 99 aircraft (51 active and 48 reserve). This system consists of a continuous loop sensor wire that will provide real time bleed air leak detection warnings to flight crews. The system will detect overheat conditions occurring in hidden structural areas and allow the crew to control serious collateral heat damage.
- Propeller Valve Housing. Older model prop valve housing governors fail during flight causing the engine to be shut down. The replacement governor uses a dual bearing configuration which greatly reduces bearing failure. This modification is required in 99 aircraft (51 active and 48 reserve).
- LOX Heat Exchanger. An Air Force Study, resulting from several mishaps, has determined that the existing flat plate type liquid oxygen heat exchanger is insufficient to heat the amount of oxygen necessary to support the full crew in the event of a mishap requiring 100% oxygen. A higher capacity coil type heat exchanger is required. This modification removes the flat plate type and replaces it with a coil type heat exchanger. It is required on the 49 aircraft.
- IFR Pump Replacement. On 7 March 1997, a fire inside a fuselage tank during aerial refueling of a F-18 aircraft brought attention to a deficiency with the design of the current IFR pump. Investigation revealed three similar incidents with USN and USMC aircraft caused by a design deficiency in the sealed upper bearing that allows it to overheat. The replacement pump offers many improvements over the existing pump including a sealed flash proof upper bearing. This modification effects 78 aircraft (51 active and 28 reserve).
- Towed Parachute Retrieval System (TPRS). USN/USMC C/KC-130 aircraft are currently operating under an N85 restriction limiting paratrooper weight to 250 pounds for static-line door exits; CNO Washington DC 251626Z Oct 99 refers. This policy restricts retrieving most combat-equipped jumpers and thus hampers realistic training. Installation of this system (currently in use by the USAF) allows for retrieval of paratroopers weighting up to 400 pounds. A Class One ECP is in development and effects 36 aircraft.
- Hose Reel Barrier. A hose reel barrier is being installed on all ARS pumps to prevent miswrap of the hose. This miswrap causes wear to the hose and failure. This failure has resulted in one onboard fire. This mod is required for 78 tanker aircraft.
- APR-39A(V)2. The APR-39A(V)2 is a replacement for the APR-39A(V)1 that is more reliable and provides increased threat protection. This mod is required for 21 aircraft. The first two val/ver kits/installs were funded by PMA272.

- DEVELOPMENT STATUS/MAJOR DEVELOPMENT MILESTONES:
- Bleed Air Duct/Overheat Detection System. Non-recurring engineering and design as well as procurement of the kits began in FY98 via a turn-key contract with the OEM (Lockheed). Validation/verification was performed during second quarter FY99. Recurring installs began FY98. Program Completed in FY01.
  - Propeller Valve Housing. Solution identified and first procurement contract for valves was placed during FY99. Recurring installations began in the 4th quarter of FY99. Program completed FY01.
  - LOX Heat Exchanger. Program will be initiated during 1st quarter FY02. Validation/verification expected 3rd quarter with recurring installs complete by the end of FY02.
  - IFR Pump Replacement. Non-recurring engineering began FY01. Validation/Verification expected by 4th quarter FY01 with recurring installations to complete FY02.
  - TPRS. These items are currently in use by the USAF and can be manufactured at Warner Robins ALC, GA. Items were procured 3rd quarter FY00 and were provided to the affected squadrons for O-Level install during 4th quarter.
  - Hose Reel Barrier. This is a commercial item developed by the ARS pump manufacturer. All barriers will be purchased and installed during FY02.
  - APR-39A(V)2. Val/ver installs were completed FY03. Recurring installs began fourth quarter FY03.

	Prior Years		FY 2003		FY 2004		FY 2005		FY 2006		FY 2007		FY 2008		FY2009		To Complete		Total		
	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	
RDT&E																					
PROCUREMENT																					
Installation Kits																					
Bleed Air Duct Kit	61	6.7																			
ODS Kit	99	5.5																			
Prop Valve Kit	99	3.5																			
Towed Parachute Retrieval Kit	36	0.1																			
APR-39A(V)2 Wiring Kit	22	*	19	*																	
LOX Heat Exchanger Kit	49	0.4																			
IFR Pump Kit	78	2.5																			
Hose Reel Barrier Kit	78	0.2																			
Installation Kits N/R		2.1																			
Installation Equipment																					
Installation Equipment N/R																					
Engineering Change Orders																					
Data		0.1																			
Training Equipment	3	0.1																			
Support Equipment																					
ILS		*																			
Other Support		1.1		0.5																	
Interim Contractor Support																					
Installation Cost	237	7.2	19	0.2																	
<b>Total Procurement</b>		<b>29.4</b>		<b>0.7</b>																	

Notes:

- Totals may not add due to rounding
- Asterisk indicates amount less than \$50K

Exhibit P-3a

MODELS OF SYSTEMS AFFECTED: C-130T, KC-130F/R/T, TC-130G MODIFICATION TITLE: SAFETY IMPROVEMENT PROGRAM (OSIP 19-98)

INSTALLATION INFORMATION:

METHOD OF IMPLEMENTATION: Depot Level FMT

ADMINISTRATIVE LEADTIME: 7 Months PRODUCTION LEADTIME: 2 Months

CONTRACT DATES: FY 2003: Dec-02 FY 2004: \_\_\_\_\_ FY 2005: \_\_\_\_\_

DELIVERY DATE: FY 2003: Feb-03 FY 2004: \_\_\_\_\_ FY 2005: \_\_\_\_\_

(\$ in Millions)

Cost:	Prior Years		FY 2003		FY 2004		FY 2005		FY 2006		FY 2007		FY 2008		FY 2009		To Complete		TOTAL		
	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	
FY 2002 & PY ( ) kits	237	7.2																			
FY 2003 ( ) kits			19	0.2																	
FY 2004 ( ) kits																					
FY 2005 ( ) kits																					
FY 2006 ( ) kits																					
FY 2007 ( ) kits																					
FY 2008 ( ) kits																					
FY 2009 ( ) kits																					
To Complete ( ) kits																					
<b>TOTAL</b>	<b>237</b>	<b>7.2</b>	<b>19</b>	<b>0.2</b>																	

Installation Schedule

	FY 2002	FY 2003				FY 2004				FY 2005				FY 2006				FY 2007				
	& Prior	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	
In	237				19																	
Out	220	17				19																

	FY 2008				FY 2009				To Complete	TOTAL
	1	2	3	4	1	2	3	4		
In										
Out										

Exhibit P-3a Individual Modification

MODIFICATION TITLE: KC-130 Onboard Navigation System (ONS) Replacement. (OSIP 11-03)

MODELS OF SYSTEMS AFFECTED: KC-130F and KC-130R TYPE MODIFICATION: Obsolescence

DESCRIPTION/JUSTIFICATION: This modification affects 5 KC-130 F and 13 KC-130R aircraft that have one LTN-72 and one LTN-211 installed. The KC-130F/R aircraft require two independent means of navigation for transoceanic missions. The LTN-211 OMEGA system was eliminated in 1997. LTN-211 are being replaced with LN-100 Replacement Inertial Navigation Units (RINU).

DEVELOPMENT STATUS/MAJOR DEVELOPMENT MILESTONES: The LN100 is a replacement for the LTN211 and the install is accomplished at O-level. The items will be procured and provided to the affected squadrons for installation beginning in FY03. The number of required units has decreased because of fleet procurements of the devices to meet operational requirements.

FINANCIAL PLAN: (TOA, \$ in Millions)

	Prior Years		FY 2003		FY 2004		FY 2005		FY 2006		FY 2007		FY 2008		FY2009		To Complete		Total		
	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	
RDT&E																					
PROCUREMENT																					
Installation Kits																					
Kit			1	0.2	10	1.1	7	0.8													
Installation Kits N/R																					
Installation Equipment																					
Installation Equipment N/R																					
Engineering Change Orders																					
Data																					
Training Equipment																					
Support Equipment																					
ILS																					
Other Support																					
Interim Contractor Support																					
Installation Cost																					
<b>Total Procurement</b>				<b>0.2</b>		<b>1.1</b>		<b>0.8</b>													

Notes:

- Totals may not add due to rounding
- Asterisk indicates amount less than \$50K

Exhibit P-3a Individual Modification

MODIFICATION TITLE: AVIONICS MODERNIZATION PROGRAM (AMP) (OSIP 13-04)

MODELS OF SYSTEMS AFFECTED: C-130T, KC-130T TYPE MODIFICATION: Safety

DESCRIPTION/JUSTIFICATION: Objectives of the AMP program are to lower the cost of ownership and increase survivability of the U.S. military's C-130 fleet, while complying with Communication, Navigation, and Surveillance/Air Traffic Management (CNS/ATM) requirements, improve the overall electrical system and modernize the cockpit. Additional equipment needed to meet Night Vision Lighting (NVL) requirements, Defensive Electronic Countermeasures (DECM), with the inclusion of newer, faster and more robust data processing systems. A full DECM suite will be installed into one validation/verification aircraft with provisions for DECM into the other 47 aircraft. Additional improvements to the C-130's precision approach and landing capability will also be installed, as well as interfaces necessary to integrate real time information in the cockpit (RTIC). In addition to providing enhanced capabilities, AMP will lower the overall cost of ownership of the C-130 fleet by generating a reduction of cockpit crew manning, and by implementing a cost effective and open architecture to increase reliability, maintainability, and sustainability (RM&S) of the avionics suite. AMP objectives will be achieved through a comprehensive cockpit modernization.

The program affects 48 Reserve aircraft and is jointly funded by PMA207 and PMA209. PMA209 is providing 48 kits and installs to cover the CNS/ATM portion of this upgrade under their OSIP 21-01, Common Avionics. PMA207 is providing 48 kits (comprising the box and wiring; 1 each per aircraft) and installs for the basic avionics portion of this upgrade. Both the CNS/ATM and avionics upgrade portions will be installed concurrently and are non-severable. The USN/USMC AMP program has a joint interest in the following USAF requirements documents: meeting the operational requirements identified in the MAF/CAF/AFSOC 902-98-I/II Operational Requirements Document (ORD) for C-130X Phase I AMP dated 26 Mar 99, AFSOC JORD 022-91-IC, Rev 1, Improved Terrain Following/Terrain Avoidance (TF/TA) Navigation System dated 16 Mar 98, AFSOC ORD 022-91-ID, SOF Enhanced Situational Awareness dated 5 Jun 98, and AFSOC ORD 007-94-1, Electronic Warfare Bus with Consolidated Display dated 13 Jul 98.

DEVELOPMENT STATUS/MAJOR DEVELOPMENT MILESTONES: This is a non-developmental item, following the Air Force lead, but not designated as a Joint Program. Navy/Marine Corps specific NRE began in FY04. Validation/Verification kits will be procured in FY05 and installed in FY06. Recurring installs scheduled to begin in FY07.

FINANCIAL PLAN: (TOA, \$ in Millions)

	Prior Years		FY 2003		FY 2004		FY 2005		FY 2006		FY 2007		FY 2008		FY2009		To Complete		Total		
	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	
RDT&E																					
PROCUREMENT																					
Installation Kits																					
Kit							2	5.4													
Installation Kits N/R					1.7		4.1														
Installation Equipment																					
Installation Equipment N/R																					
Engineering Change Orders																					
Data																					
Training Equipment																					
Support Equipment																					
ILS																					
Other Support					0.5		1.1														
Interim Contractor Support																					
Installation Cost																					
<b>Total Procurement</b>							<b>2.2</b>	<b>10.6</b>													

- Notes:  
 1. Totals may not add due to rounding  
 2. Asterisk indicates amount less than \$50K

Exhibit P-3a Individual Modification

MODIFICATION TITLE: C-130 ELECTRONIC PROP CONTROL SYSTEM (EPCS) (OSIP 21-04)

MODELS OF SYSTEMS AFFECTED: C-130F/R/T, KC-130T TYPE MODIFICATION: READINESS IMPROVEMENT

DESCRIPTION/JUSTIFICATION: The USMC KC-130 and Navy C-130T aircraft currently operate with a hydro-mechanical valve housing designed in the 1950's. This component controls the pitch angle of the propeller blades and it is consistently in the top three readiness degraders and is the number one reason for in-flight aborts. The current valve housing is a significant readiness degrader and a high manhour unscheduled maintenance driver for the fleet. EPCS has the following Operational Advisory Group (OAG) priorities: #4 Navy OAG and #8 USMC OAG. Through an FY01 COSSI initiative, OSD funded the prototype development of a modern electronic propeller control system to replace the old hydro-mechanical system. This new system is similar in design to propeller controls on several commercial turboprops in service today. This OSIP represents the first recurring installation. This OSIP affects 20 C-130T and 27 KC-130T (Reserve) aircraft.

DEVELOPMENT STATUS/MAJOR DEVELOPMENT MILESTONES: A contract for this joint effort was awarded to Hamilton Sunstrand via a Other Transaction Authority (OTA) agreement. Development of the system completed in FY02. The prototype kit was delivered in early FY03. The initial install on one engine was completed in FY03 and is currently in flight test instrumentation and evaluation at NAS Patuxent River. This testing is expected to continue until August 2004.

FINANCIAL PLAN: (TOA, \$ in Millions)

	Prior Years		FY 2003		FY 2004		FY 2005		FY 2006		FY 2007		FY 2008		FY2009		To Complete		Total		
	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	
RDT&E																					
PROCUREMENT																					
Installation Kits					1	0.4															
Installation Kits N/R						0.2															
Installation Equipment																					
XXX Equip																					
Installation Equipment N/R																					
Engineering Change Orders																					
Data																					
Training Equipment																					
Support Equipment																					
ILS																					
Other Support						0.2															
Interim Contractor Support																					
Installation Cost					1	0.2															
<b>Total Procurement</b>						<b>1.0</b>															

Notes:

1. Totals may not add due to rounding
2. Asterisk indicates amount less than \$50K
3. The EPCS OSIP is a Congressional Add.

**Exhibit P-3a**  
 MODELS OF SYSTEMS AFFECTED: C-130F/R/T, KC-130T MODIFICATION TITLE: C-130 ELECTRONIC PROP CONTROL SYSTEM (EPCS) (OSIP 021-04)

INSTALLATION INFORMATION:

METHOD OF IMPLEMENTATION: Contractor Field Modification Team

ADMINISTRATIVE LEADTIME: 11 Months PRODUCTION LEADTIME: 9 Months

CONTRACT DATES: FY 2003: \_\_\_\_\_ FY 2004: Sep-04 FY 2005: \_\_\_\_\_ FY 2006: \_\_\_\_\_

DELIVERY DATE: FY 2003: \_\_\_\_\_ FY 2004: Jun-05 FY 2005: \_\_\_\_\_ FY 2006: \_\_\_\_\_

(\$ in Millions)

Cost:	Prior Years		FY 2003		FY 2004		FY 2005		FY 2006		FY 2007		FY 2008		FY 2009		To Complete		TOTAL		
	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	
FY 2002 & PY ( ) kits																					
FY 2003 ( ) kits																					
FY 2004 (1) kits					1	0.2	*														
FY 2005 ( ) kits																					
FY 2006 ( ) kits																					
FY 2007 ( ) kits																					
FY 2008 ( ) kits																					
FY 2009 ( ) kits																					
To Complete ( ) kits																					
<b>TOTAL</b>					<b>1</b>	<b>0.2</b>															

\*The FY04 Congressional Add is funding an installation in FY05.

Installation Schedule

	FY 2002 & Prior	FY 2003				FY 2004				FY 2005				FY 2006				FY 2007				
		1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	
In												1										
Out													1									

	FY 2008				FY 2009				To Complete	TOTAL
	1	2	3	4	1	2	3	4		
In										
Out										

Exhibit P-40, BUDGET ITEM JUSTIFICATION										DATE: February 2004		
APPROPRIATION/BUDGET ACTIVITY					P-1 ITEM NOMENCLATURE							
Aircraft Procurement, Navy/APN-5 Aircraft Modifications					FEWSG (Fleet Electronic Warfare Support Group) Series Modifications							
Program Element for Code B Items:					Other Related Program Elements							
	Prior Years	ID Code		FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	To Complete	Total
QTY		A										
COST (In Millions)	57.8	A		0.6	0.6	0.6	0.6	0.6	0.6	0.6	2.8	64.8
<p>This line item funds modifications to several aircraft and equipment. The overall goal of the budgeted modifications is to accurately simulate the known and postulated electronic warfare characteristics and tactics of different threats for fleet training. OSIP 119-83 FEWSG equipment, AN/DLQ-3, AN/AST-6(V), AN/ULQ-21 and AN/ALQ-167 are installed and/or carried aboard the F/A-18, EA-6B, F-14, and are planned for carriage on the Gulfstream G-1.</p>												
(TOA, \$ in Millions)												
<u>OSIP No.</u>	<u>Description</u>	<u>Prior Years</u>		<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>	<u>FY 2008</u>	<u>FY 2009</u>	<u>To Complete</u>	<u>Total</u>
119-83	AN/DLQ-3, AN/AST-6(V), ULQ-21, ALQ-167	57.8		0.6	0.6	0.6	0.6	0.6	0.6	0.6	2.8	64.8
<b>Total</b>		<b>57.8</b>		<b>0.6</b>	<b>0.6</b>	<b>0.6</b>	<b>0.6</b>	<b>0.6</b>	<b>0.6</b>	<b>0.6</b>	<b>2.8</b>	<b>64.8</b>
<b>Note: Totals may not add due to rounding.</b>												

Exhibit P-3a Individual Modification

MODIFICATION TITLE: FEWSG (OSIP 119-83), AN/AST-6(V), AN/DLQ-3, AN/ULQ-21 & AN/ALQ-167

MODELS OF SYSTEMS AFFECTED: N/A TYPE MODIFICATION: RELIABILITY, MAINTAINABILITY, AND CAPABILITY UPGRADES

DESCRIPTION/JUSTIFICATION: The AN/ALQ-167 pods electronically simulate threat airborne radar jamming systems. The AN/ALQ-167 pods internal components are also installed internally in aircraft. When these components are utilized in this type of installation, they are nomenclatured AN/DLQ-3 and AN/ULQ-21. The AN/AST-6(V) pod electronically simulates several types of threat anti-ship missile seeker systems. These podded devices were first introduced into the fleet in 1980 and proved exceptionally useful in readiness exercises. This program provides for the procurement and initial support of additional quantities of these pods for use by logistic support squadrons and other operational fleet units. No aircraft modifications are required to use these pods.

DEVELOPMENT STATUS/MAJOR DEVELOPMENT MILESTONES: The objective for the AN/ALQ-167 is 186 pods, there are currently 146. There are 25 AN/AST-6(V) production assets. The objective is to achieve a total of 50 pods. The AN/ALQ-167 avionics are being upgraded. When these upgraded avionics are internally installed in aircraft, they are nomenclatured as AN/ULQ-21 systems.

FINANCIAL PLAN: (TOA, \$ in Millions)

	Prior Years		FY 2003		FY 2004		FY 2005		FY 2006		FY 2007		FY 2008		FY 2009		To Complete		Total	
	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$
RDT&E		15.9																		
PROCUREMENT																				
Installation Kits																				
Installation Kits N/R																				
Installation Equipment	1,008	51.0	2	0.1	2	0.1	2	0.1												
Installation Equipment N/R		0.2		0.2		0.1		0.1												
Engineering Change Orders																				
Data		0.1				*		*												
Training Equipment		0.2				*		*												
Support Equipment		5.2																		
ILS		0.8		0.2		*		*												
Other Support		0.2		0.1		0.4		0.4												
Interim Contractor Support																				
Installation Cost																				
<b>Total Procurement</b>		<b>57.8</b>		<b>0.6</b>		<b>0.6</b>		<b>0.6</b>												

- Notes:
1. Totals may not add due to rounding
  2. Asterisk indicates amount less than \$50K

**CLASSIFICATION: UNCLASSIFIED**

**Exhibit P-40, BUDGET ITEM JUSTIFICATION**

DATE: **February 2004**

APPROPRIATION/BUDGET ACTIVITY Aircraft Procurement, Navy/APN-5 Aircraft Modifications							P-1 ITEM NOMENCLATURE Cargo/ Transport Aircraft Series Modifications					
Program Element for Code B Items:							Other Related Program Elements					
	Prior Years	ID Code		FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	To Complete	Total
QTY		A										
COST (In Millions)	39.1	A		3.7	13.2	8.3	19.8	30.0	26.1	17.8	16.2	174.3

This line item funds modifications to the following cargo and transport aircraft: C-9B/DC-9, C-20D/G, RC-12F/M, UC-12B/F/M, NC-12B, TC-12B, EC/RC-26D, C-40A, UC-35C/D, C-37. The C-9B/DC-9 Skytrain II, CT-39G (Sabreliner), C-20D/G (Gulfstream IV), C-40A (Boeing), UC-35C/D (Cessna Citation) and the C-37 (Gulfstream G-V) are all twin jet commercial transport aircraft. The C-9B/DC-9 is capable of carrying up to 32,000 pounds of both cargo and personnel for over 3,300 nautical miles at a maximum speed of 430+ knots. The C-20D/G are capable of high speed transport of 13 personnel over 4,100 nautical miles at 437 knots. The RC-12F/M, NC-12B, and UC-12B/F/M are twin turbo-prop commercial transport aircraft (King Air) capable of a variety of general purpose transport and specialized missions. They can carry 8 people up to 1,300 nautical miles at 200 knots. The C-40A will provide time-critical logistics support for the fleet CINCs and will accommodate 121 passengers, or 8 pallets of cargo, or a combination configuration consisting of 3 pallets and 70 passengers. The C-40A has a range of 3,400 nautical miles with 5,000 lbs of cargo. The UC-35C/D will provide transport for high priority passenger/ cargo missions with time, place or mission sensitive requirements. The UC-35C/D will carry 6 passengers or 1,200 lbs of cargo and has a range of 1,400 nautical miles. The C-26D and EC/RC-26D are twin turbo-prop aircraft (Fairchild Metro) capable of passenger/ cargo transport and range control missions. The C-26D can carry 19 passengers up to 1,300 nautical miles at 234 knots. The C-37 provides Executive transport for SECNAV, CNO, CMC, and Fleet Commanders. The overall goal of the modifications budgeted in FY 2005 and out is to procure/ install Flight Safety Upgrades to the C-12 aircraft and to continue CNS/ATM upgrades to the C-40, C-37, UC-35, C-26, C-20 and C-12 aircraft. The specific modifications budgeted and programmed are as follows:

(TOA, \$ in Millions)

OSIP No.	Description	Prior Years	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	To Complete	Total
71-86	FAA Configuration Updates	19.3	0.4	0.7							20.3
14-98	C-12 Flight Safety Upgrades	19.8	1.0	5.4	5.4	4.9					36.6
01-03	C-20 Flight Management Systems		2.3								2.3
12-04	CNS/ATM			7.1	2.9	14.9	30.0	26.1	17.8	16.2	115.1
<b>Total</b>		<b>39.1</b>	<b>3.7</b>	<b>13.2</b>	<b>8.3</b>	<b>19.8</b>	<b>30.0</b>	<b>26.1</b>	<b>17.8</b>	<b>16.2</b>	<b>174.3</b>
	Reserve funding included in total		0.4	4.2	0.9	15.0	24.0	25.9	17.8		

**Note: Totals may not add due to rounding.**

Exhibit P-3a Individual Modification

MODIFICATION TITLE: Federal Aviation Administration (FAA) Configuration Update (OSIP 71-86)

MODELS OF SYSTEMS AFFECTED: C-9B/DC-9/C-20D/C-20G/UC-12B/UC-12F/UC-12M/RC-12F/RC-12M/TC-12B/NC-12B/CT39G/C-26D/UC-35/C-40A TYPE MODIFICATION: Safety/Maintainability/Reliability

DESCRIPTION/JUSTIFICATION: Federal Aviation Regulations require manufacturers of commercial aircraft and associated systems/subsystems to investigate discrepant conditions, failures, and potential safety problems reported by all operators. The results of these investigations with recommended corrective action are reviewed/approved by the FAA and Navy and provided to all operators as service bulletins. Each service bulletin is a complete technical directive that provides corrective change information or detailed modification instructions. To ensure safe, reliable, FAA/Navy certified aircraft and to provide a program that will assure continued life extension at minimum cost, the Navy must maintain configuration and integrity compatible with FAA certified commercial models by incorporation of applicable service bulletins. The incorporation of certain service bulletins also serves to preclude extensive repairs/repetitive inspections. Crew equipment requirements in accordance with FAA directives and Navy requirements will be incorporated to ensure maximum safety in case of emergency. Specific modifications budgeted in this OSIP include the incorporation of C-9B/DC-9, C-20, C-26 and C-12 FAA Bulletins and Directives.

DEVELOPMENT STATUS/MAJOR DEVELOPMENT MILESTONES: Service Bulletins are reviewed for possible incorporation on an as required basis. Prototype verification has been previously accomplished and approved by the FAA.

FINANCIAL PLAN: (TOA, \$ in Millions)

	Prior Years		FY 2003		FY 2004		FY 2005		FY 2006		FY 2007		FY 2008		FY2009		To Complete		Total		
	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	
RDT&E																					
PROCUREMENT																					
Installation Kits																					
C-12	74	0.9			20	0.2															
C-9 ENGINES	13	0.2																			
C-20	238	0.6	35	0.1	25	0.1															
C-9	281	5.1	1	0.1																	
C-26	7	0.3			4	0.2															
C-9 HUSH KITS	1	1.2																			
Installation Kits N/R		2.6		0.1		*															
Installation Equipment																					
XXX Equip																					
Installation Equipment N/R																					
Engineering Change Orders																					
XXX Kit ECO XXX																					
XXX Equip ECO XXX																					
Data		0.3		*		*															
Training Equipment		0.2																			
Support Equipment																					
ILS		0.0																			
Other Support		0.5																			
Interim Contractor Support		0.2																			
Installation Cost	614	7.1	36	0.1	49	0.1															
<b>Total Procurement</b>		<b>19.3</b>		<b>0.4</b>		<b>0.7</b>															

- Notes:
- Totals may not add due to rounding
  - Asterisk indicates amount less than \$50K

**Exhibit P-3a**

MODELS OF SYSTEMS AFFECTED: C-9B/DC-9/C-20D/C-20G/UC-12B/UC-12F/UC-12M/RC-12F/RC-12M/TC-12B/NC-12D/DC-12B/DC-12C/DC-12D/DC-12E/DC-12F/DC-12G/DC-12H/DC-12J/DC-12K/DC-12L/DC-12M/DC-12N/DC-12P/DC-12Q/DC-12R/DC-12S/DC-12T/DC-12U/DC-12V/DC-12W/DC-12X/DC-12Y/DC-12Z/DC-12AA/DC-12AB/DC-12AC/DC-12AD/DC-12AE/DC-12AF/DC-12AG/DC-12AH/DC-12AI/DC-12AJ/DC-12AK/DC-12AL/DC-12AM/DC-12AN/DC-12AO/DC-12AP/DC-12AQ/DC-12AR/DC-12AS/DC-12AT/DC-12AU/DC-12AV/DC-12AW/DC-12AX/DC-12AY/DC-12AZ/DC-12BA/DC-12BB/DC-12BC/DC-12BD/DC-12BE/DC-12BF/DC-12BG/DC-12BH/DC-12BI/DC-12BJ/DC-12BK/DC-12BL/DC-12BM/DC-12BN/DC-12BO/DC-12BP/DC-12BQ/DC-12BR/DC-12BS/DC-12BT/DC-12BU/DC-12BV/DC-12BW/DC-12BX/DC-12BY/DC-12BZ/DC-12CA/DC-12CB/DC-12CC/DC-12CD/DC-12CE/DC-12CF/DC-12CG/DC-12CH/DC-12CI/DC-12CJ/DC-12CK/DC-12CL/DC-12CM/DC-12CN/DC-12CO/DC-12CP/DC-12CQ/DC-12CR/DC-12CS/DC-12CT/DC-12CU/DC-12CV/DC-12CW/DC-12CX/DC-12CY/DC-12CZ/DC-12DA/DC-12DB/DC-12DC/DC-12DD/DC-12DE/DC-12DF/DC-12DG/DC-12DH/DC-12DI/DC-12DJ/DC-12DK/DC-12DL/DC-12DM/DC-12DN/DC-12DO/DC-12DP/DC-12DQ/DC-12DR/DC-12DS/DC-12DT/DC-12DU/DC-12DV/DC-12DW/DC-12DX/DC-12DY/DC-12DZ/DC-12EA/DC-12EB/DC-12EC/DC-12ED/DC-12EE/DC-12EF/DC-12EG/DC-12EH/DC-12EI/DC-12EJ/DC-12EK/DC-12EL/DC-12EM/DC-12EN/DC-12EO/DC-12EP/DC-12EQ/DC-12ER/DC-12ES/DC-12ET/DC-12EU/DC-12EV/DC-12EW/DC-12EX/DC-12EY/DC-12EZ/DC-12FA/DC-12FB/DC-12FC/DC-12FD/DC-12FE/DC-12FF/DC-12FG/DC-12FH/DC-12FI/DC-12FJ/DC-12FK/DC-12FL/DC-12FM/DC-12FN/DC-12FO/DC-12FP/DC-12FQ/DC-12FR/DC-12FS/DC-12FT/DC-12FU/DC-12FV/DC-12FW/DC-12FX/DC-12FY/DC-12FZ/DC-12GA/DC-12GB/DC-12GC/DC-12GD/DC-12GE/DC-12GF/DC-12GG/DC-12GH/DC-12GI/DC-12GJ/DC-12GK/DC-12GL/DC-12GM/DC-12GN/DC-12GO/DC-12GP/DC-12GQ/DC-12GR/DC-12GS/DC-12GT/DC-12GU/DC-12GV/DC-12GW/DC-12GX/DC-12GY/DC-12GZ/DC-12HA/DC-12HB/DC-12HC/DC-12HD/DC-12HE/DC-12HF/DC-12HG/DC-12HH/DC-12HI/DC-12HJ/DC-12HK/DC-12HL/DC-12HM/DC-12HN/DC-12HO/DC-12HP/DC-12HQ/DC-12HR/DC-12HS/DC-12HT/DC-12HU/DC-12HV/DC-12HW/DC-12HX/DC-12HY/DC-12HZ/DC-12IA/DC-12IB/DC-12IC/DC-12ID/DC-12IE/DC-12IF/DC-12IG/DC-12IH/DC-12II/DC-12IJ/DC-12IK/DC-12IL/DC-12IM/DC-12IN/DC-12IO/DC-12IP/DC-12IQ/DC-12IR/DC-12IS/DC-12IT/DC-12IU/DC-12IV/DC-12IW/DC-12IX/DC-12IY/DC-12IZ/DC-12JA/DC-12JB/DC-12JC/DC-12JD/DC-12JE/DC-12JF/DC-12JG/DC-12JH/DC-12JI/DC-12JJ/DC-12JK/DC-12JL/DC-12JM/DC-12JN/DC-12JO/DC-12JP/DC-12JQ/DC-12JR/DC-12JS/DC-12JT/DC-12JU/DC-12JV/DC-12JW/DC-12JX/DC-12JY/DC-12JZ/DC-12KA/DC-12KB/DC-12KC/DC-12KD/DC-12KE/DC-12KF/DC-12KG/DC-12KH/DC-12KI/DC-12KJ/DC-12KK/DC-12KL/DC-12KM/DC-12KN/DC-12KO/DC-12KP/DC-12KQ/DC-12KR/DC-12KS/DC-12KT/DC-12KU/DC-12KV/DC-12KW/DC-12KX/DC-12KY/DC-12KZ/DC-12LA/DC-12LB/DC-12LC/DC-12LD/DC-12LE/DC-12LF/DC-12LG/DC-12LH/DC-12LI/DC-12LJ/DC-12LK/DC-12LL/DC-12LM/DC-12LN/DC-12LO/DC-12LP/DC-12LQ/DC-12LR/DC-12LS/DC-12LT/DC-12LU/DC-12LV/DC-12LW/DC-12LX/DC-12LY/DC-12LZ/DC-12MA/DC-12MB/DC-12MC/DC-12MD/DC-12ME/DC-12MF/DC-12MG/DC-12MH/DC-12MI/DC-12MJ/DC-12MK/DC-12ML/DC-12MN/DC-12MO/DC-12MP/DC-12MQ/DC-12MR/DC-12MS/DC-12MT/DC-12MU/DC-12MV/DC-12MW/DC-12MX/DC-12MY/DC-12MZ/DC-12NA/DC-12NB/DC-12NC/DC-12ND/DC-12NE/DC-12NF/DC-12NG/DC-12NH/DC-12NI/DC-12NJ/DC-12NK/DC-12NL/DC-12NM/DC-12NO/DC-12NP/DC-12NQ/DC-12NR/DC-12NS/DC-12NT/DC-12NU/DC-12NV/DC-12NW/DC-12NX/DC-12NY/DC-12NZ/DC-12OA/DC-12OB/DC-12OC/DC-12OD/DC-12OE/DC-12OF/DC-12OG/DC-12OH/DC-12OI/DC-12OJ/DC-12OK/DC-12OL/DC-12OM/DC-12ON/DC-12OO/DC-12OP/DC-12OQ/DC-12OR/DC-12OS/DC-12OT/DC-12OU/DC-12OV/DC-12OW/DC-12OX/DC-12OY/DC-12OZ/DC-12PA/DC-12PB/DC-12PC/DC-12PD/DC-12PE/DC-12PF/DC-12PG/DC-12PH/DC-12PI/DC-12PJ/DC-12PK/DC-12PL/DC-12PM/DC-12PN/DC-12PO/DC-12PP/DC-12PQ/DC-12PR/DC-12PS/DC-12PT/DC-12PU/DC-12PV/DC-12PW/DC-12PX/DC-12PY/DC-12PZ/DC-12QA/DC-12QB/DC-12QC/DC-12QD/DC-12QE/DC-12QF/DC-12QG/DC-12QH/DC-12QI/DC-12QJ/DC-12QK/DC-12QL/DC-12QM/DC-12QN/DC-12QO/DC-12QP/DC-12QQ/DC-12QR/DC-12QS/DC-12QT/DC-12QU/DC-12QV/DC-12QW/DC-12QX/DC-12QY/DC-12QZ/DC-12RA/DC-12RB/DC-12RC/DC-12RD/DC-12RE/DC-12RF/DC-12RG/DC-12RH/DC-12RI/DC-12RJ/DC-12RK/DC-12RL/DC-12RM/DC-12RN/DC-12RO/DC-12RP/DC-12RQ/DC-12RR/DC-12RS/DC-12RT/DC-12RU/DC-12RV/DC-12RW/DC-12RX/DC-12RY/DC-12RZ/DC-12SA/DC-12SB/DC-12SC/DC-12SD/DC-12SE/DC-12SF/DC-12SG/DC-12SH/DC-12SI/DC-12SJ/DC-12SK/DC-12SL/DC-12SM/DC-12SN/DC-12SO/DC-12SP/DC-12SQ/DC-12SR/DC-12SS/DC-12ST/DC-12SU/DC-12SV/DC-12SW/DC-12SX/DC-12SY/DC-12SZ/DC-12TA/DC-12TB/DC-12TC/DC-12TD/DC-12TE/DC-12TF/DC-12TG/DC-12TH/DC-12TI/DC-12TJ/DC-12TK/DC-12TL/DC-12TM/DC-12TN/DC-12TO/DC-12TP/DC-12TQ/DC-12TR/DC-12TS/DC-12TT/DC-12TU/DC-12TV/DC-12TW/DC-12TX/DC-12TY/DC-12TZ/DC-12UA/DC-12UB/DC-12UC/DC-12UD/DC-12UE/DC-12UF/DC-12UG/DC-12UH/DC-12UI/DC-12UJ/DC-12UK/DC-12UL/DC-12UM/DC-12UN/DC-12UO/DC-12UP/DC-12UQ/DC-12UR/DC-12US/DC-12UT/DC-12UU/DC-12UV/DC-12UW/DC-12UX/DC-12UY/DC-12UZ/DC-12VA/DC-12VB/DC-12VC/DC-12VD/DC-12VE/DC-12VF/DC-12VG/DC-12VH/DC-12VI/DC-12VJ/DC-12VK/DC-12VL/DC-12VM/DC-12VN/DC-12VO/DC-12VP/DC-12VQ/DC-12VR/DC-12VS/DC-12VT/DC-12VU/DC-12VV/DC-12VW/DC-12VX/DC-12VY/DC-12VZ/DC-12WA/DC-12WB/DC-12WC/DC-12WD/DC-12WE/DC-12WF/DC-12WG/DC-12WH/DC-12WI/DC-12WJ/DC-12WK/DC-12WL/DC-12WM/DC-12WN/DC-12WO/DC-12WP/DC-12WQ/DC-12WR/DC-12WS/DC-12WT/DC-12WU/DC-12WV/DC-12WW/DC-12WX/DC-12WY/DC-12WZ/DC-12XA/DC-12XB/DC-12XC/DC-12XD/DC-12XE/DC-12XF/DC-12XG/DC-12XH/DC-12XI/DC-12XJ/DC-12XK/DC-12XL/DC-12XM/DC-12XN/DC-12XO/DC-12XP/DC-12XQ/DC-12XR/DC-12XS/DC-12XT/DC-12XU/DC-12XV/DC-12XW/DC-12XX/DC-12XY/DC-12XZ/DC-12YA/DC-12YB/DC-12YC/DC-12YD/DC-12YE/DC-12YF/DC-12YG/DC-12YH/DC-12YI/DC-12YJ/DC-12YK/DC-12YL/DC-12YM/DC-12YN/DC-12YO/DC-12YP/DC-12YQ/DC-12YR/DC-12YS/DC-12YT/DC-12YU/DC-12YV/DC-12YW/DC-12YX/DC-12YY/DC-12YZ/DC-12ZA/DC-12ZB/DC-12ZC/DC-12ZD/DC-12ZE/DC-12ZF/DC-12ZG/DC-12ZH/DC-12ZI/DC-12ZJ/DC-12ZK/DC-12ZL/DC-12ZM/DC-12ZN/DC-12ZO/DC-12ZP/DC-12ZQ/DC-12ZR/DC-12ZS/DC-12ZT/DC-12ZU/DC-12ZV/DC-12ZW/DC-12ZX/DC-12ZY/DC-12ZZ

INSTALLATION INFORMATION:

METHOD OF IMPLEMENTATION: Contractor Depot

ADMINISTRATIVE LEADTIME: Various Months PRODUCTION LEADTIME: Months

CONTRACT DATES: FY 2003: Various FY 2004: Various FY 2005: Various

DELIVERY DATE: FY 2003: Various FY 2004: Various FY 2005: Various

(\$ in Millions)

Cost:	Prior Years		FY 2003		FY 2004		FY 2005		FY 2006		FY 2007		FY 2008		FY 2009		To Complete		TOTAL		
	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	
FY 2002 & PY ( ) kits	614	7.1																			
FY 2003 ( ) kits			36	0.1																	
FY 2004 ( ) kits					49	0.1															
FY 2005 ( ) kits																					
FY 2006 ( ) kits																					
FY 2007 ( ) kits																					
FY 2008 ( ) kits																					
FY 2009 ( ) kits																					
To Complete ( ) kits																					
<b>TOTAL</b>	<b>614</b>	<b>7.1</b>	<b>36</b>	<b>0.1</b>	<b>49</b>	<b>0.1</b>															

Installation Schedule

	FY 2002 & Prior	FY 2003				FY 2004				FY 2005				FY 2006				FY 2007				
		1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	
In	614	12	12	12		16	16	17														
Out	614	12	12	12	12		16	16	17													

	FY 2008				FY 2009				To Complete	Total
	1	2	3	4	1	2	3	4		
In										
Out										

Exhibit P-3a Individual Modification

MODIFICATION TITLE: Flight Safety Upgrade (OSIP 14-98)

MODELS OF SYSTEMS AFFECTED: UC-12B/F/M, TC-12B, RC-12F/M TYPE MODIFICATION: Safety

DESCRIPTION/JUSTIFICATION: The crash of a U.S. Air Force CT-43 while flying a non-directional radio beacon (NDB) approach resulted in a Department of Defense initiative to upgrade flight safety systems as soon as possible in all passenger carrying aircraft. This OSIP was established to ensure compliance with this initiative on 81 C-12 model aircraft and identified flight safety systems required to provide capability upgrade to directed requirements. Recent initiatives to divest CONUS UC-12B aircraft have reduced the number of C-12 aircraft to receive Flight Safety Upgrades (FSU) from 81 aircraft to 45 aircraft. However, 16 UC-12B have already received (FSU) under this OSIP and will be reflected in the numbers below. Under this OSIP C-12 aircraft require installation of Enhance Ground Proximity Warning Systems and Traffic collision avoidance systems (TCAS II). Additionally, UC-12 aircraft not subject to divestiture require upgrades to provide a more reliable radar altimeter. Total number of aircraft reflected under this OSIP is 61 aircraft.

DEVELOPMENT STATUS/MAJOR DEVELOPMENT MILESTONES: Systems are commercial off the shelf (COTS) and do not require development. System prototypes are required in 3 aircraft.  
 Note: This Exhibit reflects the reduction of 37 CONUS based UC-12B aircraft scheduled for potential divestiture.

FINANCIAL PLAN: (TOA, \$ in Millions)

	Prior Years		FY 2003		FY 2004		FY 2005		FY 2006		FY 2007		FY 2008		FY2009		To Complete		Total		
	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	
RDT&E																					
PROCUREMENT																					
Installation Kits																					
FSU Kit	29	9.2			11	3.6	11	3.6													
Installation Kits N/R		6.0		0.4																	
Installation Equipment																					
Installation Equipment N/R																					
Engineering Change Orders					0.5		0.3														
Data		0.2			0.3		0.1														
Training Equipment		0.9		0.0	0.3		0.2														
Support Equipment																					
ILS		0.4		0.3	0.3		0.1														
Other Support		0.9		0.2	0.4		0.3														
Interim Contractor Support																					
Installation Cost	28	2.2	1	0.1			11	0.8													
<b>Total Procurement</b>		<b>19.8</b>		<b>1.0</b>		<b>5.4</b>		<b>5.4</b>													

- Notes:
1. Totals may not add due to rounding
  2. Asterisk indicates amount less than \$50K

Exhibit P-3a

MODELS OF SYSTEMS AFFECTED: UC-12B/F/M, TC-12B, RC-12F/M MODIFICATION TITLE: Flight Safety Upgrade (OSIP 14-98)

INSTALLATION INFORMATION:

METHOD OF IMPLEMENTATION: Contractor Installed Kits

ADMINISTRATIVE LEADTIME: 1 Months PRODUCTION LEADTIME: 12 Months

CONTRACT DATES: FY 2003: Nov-02 FY 2004: Nov-03 FY 2005: Nov-04

DELIVERY DATE: FY 2003: Dec-03 FY 2004: Dec-04 FY 2005: Dec-05

(\$ in Millions)

Cost:	Prior Years		FY 2003		FY 2004		FY 2005		FY 2006		FY 2007		FY 2008		FY 2009		To Complete		TOTAL	
	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$
FY 2002 & PY ( ) kits	28	2.2																		
FY 2003 ( ) kits			1	0.1																
FY 2004 ( ) kits							11	0.8												
FY 2005 ( ) kits																				
FY 2006 ( ) kits																				
FY 2007 ( ) kits																				
FY 2008 ( ) kits																				
FY 2009 ( ) kits																				
To Complete ( ) kits																				
<b>TOTAL</b>	<b>28</b>	<b>2.2</b>	<b>1</b>	<b>0.1</b>			<b>11</b>	<b>0.8</b>												

Installation Schedule

FY 2002 & Prior	FY 2003				FY 2004				FY 2005				FY 2006				FY 2007			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
In	28		1							3	3	3	2							
Out	28		1							3	3	3	2							

	FY 2008				FY 2009				To Complete	Total
	1	2	3	4	1	2	3	4		
In										
Out										

Exhibit P-3a Individual Modification

MODIFICATION TITLE: Flight Management Systems (FMS) (OSIP 01-03)

MODELS OF SYSTEMS AFFECTED: C-20 D TYPE MODIFICATION: Safety

DESCRIPTION/JUSTIFICATION: This modification provides the C-20D aircraft, with an upgrade to the flight control display system and an incorporation of a High Frequency (HF) Data Link system. The flight control display system will integrate all current and future airspace navigation requirements (CNS/ATM) into a single integrated system with expandable architecture. The HF Data Link is a CNS/ATM requirement component system that integrates into the upgraded flight control display system. The system configured consists of a necessary redundancy of kits, such that 2 kits per aircraft is required. There are currently 2 C-20D aircraft in inventory, both of which will receive this modification.

DEVELOPMENT STATUS/MAJOR DEVELOPMENT MILESTONES: FAA approved Supplement Type Certifications (STC) have been approved and commercial off the shelf (COTS) equipment will be purchased with subsequent installation to be performed by CLS contractor at depot level on 2 C-20D aircraft.

FINANCIAL PLAN: (TOA, \$ in Millions)

	Prior Years		FY 2003		FY 2004		FY 2005		FY 2006		FY 2007		FY 2008		FY2009		To Complete		Total		
	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	
RDT&E																					
PROCUREMENT																					
Installation Kits																					
C-20D/G DFH KITS			2	0.2																	
C-20 FMS UPGRADE KIT			1	1.2																	
XXX Kit																					
Installation Kits N/R				0.3																	
Installation Equipment																					
XXX Equip																					
Installation Equipment N/R																					
Engineering Change Orders																					
XXX Kit ECO XXX																					
XXX Equip ECO XXX																					
Data				0.1																	
Training Equipment				0.1																	
Support Equipment																					
ILS				0.2																	
Other Support				0.1																	
Interim Contractor Support																					
Installation Cost			3	0.1																	
<b>Total Procurement</b>				<b>2.3</b>																	

Notes:

1. Totals may not add due to rounding
2. Asterisk indicates amount less than \$50K

Exhibit P-3a

MODELS OF SYSTEMS AFFECTED: C-20 D MODIFICATION TITLE: Flight Management Systems (FMS) (OSIP 01-03)

INSTALLATION INFORMATION:

METHOD OF IMPLEMENTATION: Kits to be installed by maintenance contractor at depot

ADMINISTRATIVE LEADTIME: 2 Months PRODUCTION LEADTIME: 1 Months

CONTRACT DATES: FY 2003: Dec-02 FY 2004: \_\_\_\_\_ FY 2005: \_\_\_\_\_

DELIVERY DATE: FY 2003: Jan-03 FY 2004: \_\_\_\_\_ FY 2005: \_\_\_\_\_

(\$ in Millions)

Cost:	Prior Years		FY 2003		FY 2004		FY 2005		FY 2006		FY 2007		FY 2008		FY 2009		To Complete		TOTAL		
	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	
FY 2002 & PY ( ) kits																					
FY 2003 ( ) kits			3	0.1																	
FY 2004 ( ) kits																					
FY 2005 ( ) kits																					
FY 2006 ( ) kits																					
FY 2007 ( ) kits																					
FY 2008 ( ) kits																					
FY 2009 ( ) kits																					
To Complete ( ) kits																					
<b>TOTAL</b>			<b>3</b>	<b>0.1</b>																	

Installation Schedule

FY 2002 & Prior	FY 2003				FY 2004				FY 2005				FY 2006				FY 2007				
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	
In	2	1																			
Out		2	1																		

	FY 2008				FY 2009				To Complete	Total
	1	2	3	4	1	2	3	4		
In										
Out										

Exhibit P-3a Individual Modification

MODIFICATION TITLE: CNS-ATM (OSIP 12-04)

MODELS OF SYSTEMS AFFECTED: C-12, C-20, C-26, C-35, C-37, C-40 TYPE MODIFICATION: Safety

DESCRIPTION/JUSTIFICATION: Communication-Navigation-Surveillance-Air-Traffic-Management (CNS-ATM) upgrades are required to satisfy International Civil Aviation Organization (ICAO) standards and Federal Aviation Administration (FAA) First and Second Phase mandates. FAA Phase 1 (1998 - 2002) delivers a subset of CNS capabilities. Implemented were: Ground Proximity Warning System, RNP - 10 NM Accuracy, Protected ILS (P-ILS) – FM Immunity, 8.33KHz spaced VHF channels and Over-water Reduced Vertical Separation Minima. All C-12 non-trainer aircraft (56) will receive P-ILS modification under this OSIP. Because the C-12 European aircraft were the only aircraft modified with the 8.33 KHz radios under OSIP 71-86, the remaining CONUS aircraft (13) are to receive this modification under this OSIP. This OSIP installs FAA Phase 2 (2003 - 2009), deploying the next generation of CNS equipment: Data link will provide Controller Pilot Data Link Communications (CPDLC) and Tower Data Link Services (TDLS) for the exchange of data communication messages between the controller personnel and pilots with an automated data link communications capability that reduces workload and reduces voice frequency congestion through digital radios. These digital radios will comply with international standards defined by ICAO for CPDLC in an Aeronautical Telecommunications Network (ATN) environment. All 96 aircraft in 6 T/M/S will receive this modification. Radio Navigation Performance (RNP) accuracy improvement to RNP-5NM is a method which permits aircraft navigation along any desired flight path within the coverage of the associated navigation aids or within the limits of the capability of self-contained aids, or a combination of these methods. Advances in Navigation RNP functionality will enable improvements in airspace design (structure, sectorization, associated route network, applicable route spacing, separation minima and responsibilities, etc.), and will allow for a high degree of flexibility for aircraft operations and for the navigational equipment used. Satellite-based (GPS) navigation systems will be augmented in local areas for non-precision and precision approaches. All 96 aircraft in 6 T/M/S will receive this modification. The Local Area Augmentation System (LAAS) kit will provide navigation system improvement to communicate within local areas for precision and non-precision approaches. All 96 aircraft in 6 T/M/S will receive this modification. The C-20D and C-26 aircraft require an avionics upgrade prior to receiving the CNS-ATM modification. This avionics upgrade consists of a digital automatic flight control system, which provides flight director, autopilot, pitch trim, Mach trim and TCAS/Mode S upgrades. The system operates in conjunction with the electronic display system that consists of primary flight displays, navigation displays, engine instrument displays, and crew alerting system displays. The flight control system will enable integration of all current and future CNS/ATM requirements into a single system with expandable architecture. One C-20D aircraft and 7 C-26 aircraft will receive this architecture upgrades to support FAA Phase 2 upgrade. CNS fulfills multiple FAA/ICAO mandates across multiple Cargo/Transport T/M/S aircraft. These aircraft operate worldwide and constantly communicate with and operate within civilian controlled airspace, both nationally and internationally. Failure to comply will ground aircraft and halt missions. There are 96 aircraft in 6 T/M/S's in the cargo/transport inventory. Aircraft receiving mods from this OSIP are 60 C-12, 7 C-20, 7 C-26, 6 UC-35, 4 C-37 and 12 C-40.

DEVELOPMENT STATUS/MAJOR DEVELOPMENT MILESTONES: All kits are Commercial Off-the-Shelf equipment. Non-recurring engineering is required for data link, RNP and LAAS and the Avionics Upgrade in the C-26; thus NRE is broken out separately for each kit type.

FINANCIAL PLAN: (TOA, \$ in Millions)

	Prior Years		FY 2003		FY 2004		FY 2005		FY 2006		FY 2007		FY 2008		FY2009		To Complete		Total		
	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	
RDT&E																					
PROCUREMENT																					
Installation Kits																					
DATA LINK KITS																					
RNP UPGRADE KIT							2	0.3													
LAAS KIT																					
P-ILS KIT					16	0.2															
AVIONICS UPGRADE KIT					1	1.4	1	0.4													
8.33 KHZ RADIO KIT					16	0.5															
Installation Kits N/R						3.3		0.8													
Installation Equipment																					
XXX Equip																					
Installation Equipment N/R																					
Engineering Change Orders																					
XXX Kit ECO XXX																					
XXX Equip ECO XXX																					
Data								0.5													
Training Equipment																					
Support Equipment																					
ILS						0.3		0.1													
Other Support						0.8		0.1													
Interim Contractor Support																					
Installation Cost					33	0.7	3	0.7													
<b>Total Procurement</b>						<b>7.1</b>		<b>2.9</b>													

Notes:

1. Totals may not add due to rounding
2. Asterisk indicates amount less than \$50K

**Exhibit P-3a**

MODELS OF SYSTEMS AFFECTED: C-12 MODIFICATION TITLE: CNS-ATM (OSIP 12-04)

INSTALLATION INFORMATION:

METHOD OF IMPLEMENTATION: Depot Contractor

ADMINISTRATIVE LEADTIME: 3 Months PRODUCTION LEADTIME: 1 Months

CONTRACT DATES: FY 2003: \_\_\_\_\_ FY 2004: Jan-04 FY 2005: Jan-05

DELIVERY DATE: FY 2003: \_\_\_\_\_ FY 2004: Feb-04 FY 2005: Feb-05

(\$ in Millions)

Cost:	Prior Years		FY 2003		FY 2004		FY 2005		FY 2006		FY 2007		FY 2008		FY 2009		To Complete		TOTAL		
	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	
FY 2002 & PY ( ) kits																					
FY 2003 ( ) kits																					
FY 2004 ( ) kits					32	0.3															
FY 2005 ( ) kits							2	0.3													
FY 2006 ( ) kits																					
FY 2007 ( ) kits																					
FY 2008 ( ) kits																					
FY 2009 ( ) kits																					
To Complete ( ) kits																					
<b>TOTAL</b>					<b>32</b>	<b>0.3</b>	<b>2</b>	<b>0.3</b>													

Installation Schedule

	FY 2002 & Prior	FY 2003				FY 2004				FY 2005				FY 2006				FY 2007			
		1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
In						11	11	10		2											
Out						10	11	11		1	1										

	FY 2008				FY 2009				To Complete	Total
	1	2	3	4	1	2	3	4		
In										
Out										

**Exhibit P-3a**

MODELS OF SYSTEMS AFFECTED: C-20 MODIFICATION TITLE: CNS/ATM (OSIP 12-04)

INSTALLATION INFORMATION:

METHOD OF IMPLEMENTATION: Contractor Drive In Modification Team

ADMINISTRATIVE LEADTIME: 3 Months PRODUCTION LEADTIME: 1 Months

CONTRACT DATES: FY 2003: \_\_\_\_\_ FY 2004: Jan-04 FY 2005: \_\_\_\_\_

DELIVERY DATE: FY 2003: \_\_\_\_\_ FY 2004: Feb-04 FY 2005: \_\_\_\_\_

(\$ in Millions)

Cost:	Prior Years		FY 2003		FY 2004		FY 2005		FY 2006		FY 2007		FY 2008		FY 2009		To Complete		TOTAL		
	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	
FY 2002 & PY ( ) kits																					
FY 2003 ( ) kits																					
FY 2004 ( ) kits					1	0.4															
FY 2005 ( ) kits																					
FY 2006 ( ) kits																					
FY 2007 ( ) kits																					
FY 2008 ( ) kits																					
FY 2009 ( ) kits																					
To Complete ( ) kits																					
<b>TOTAL</b>					<b>1</b>	<b>0.4</b>															

Installation Schedule

	FY 2002 & Prior	FY 2003				FY 2004				FY 2005				FY 2006				FY 2007			
		1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
In						1															
Out								1													

	FY 2008				FY 2009				To Complete	Total
	1	2	3	4	1	2	3	4		
In										
Out										

**Exhibit P-3a**

MODELS OF SYSTEMS AFFECTED: C-26 MODIFICATION TITLE: C-26 CNS/ATM UPGRADE (OSIP 12-04)

INSTALLATION INFORMATION:

METHOD OF IMPLEMENTATION: Depot Contractor

ADMINISTRATIVE LEADTIME: 3 Months PRODUCTION LEADTIME: 1 Months

CONTRACT DATES: FY 2003: \_\_\_\_\_ FY 2004: \_\_\_\_\_ FY 2005: Jan-05

DELIVERY DATE: FY 2003: \_\_\_\_\_ FY 2004: \_\_\_\_\_ FY 2005: Feb-05

(\$ in Millions)

Cost:	Prior Years		FY 2003		FY 2004		FY 2005		FY 2006		FY 2007		FY 2008		FY 2009		To Complete		TOTAL		
	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	
FY 2002 & PY ( ) kits																					
FY 2003 ( ) kits																					
FY 2004 ( ) kits																					
FY 2005 ( ) kits							1	0.4													
FY 2006 ( ) kits																					
FY 2007 ( ) kits																					
FY 2008 ( ) kits																					
FY 2009 ( ) kits																					
To Complete ( ) kits																					
<b>TOTAL</b>							<b>1</b>	<b>0.4</b>													

Installation Schedule

	FY 2002 & Prior	FY 2003				FY 2004				FY 2005				FY 2006				FY 2007			
		1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
In												1									
Out												1									

	FY 2008				FY 2009				To Complete	Total
	1	2	3	4	1	2	3	4		
In										
Out										

Exhibit P-40, BUDGET ITEM JUSTIFICATION						DATE: February 2004					
APPROPRIATION/BUDGET ACTIVITY						P-1 ITEM NOMENCLATURE					
Aircraft Procurement, Navy/APN-5 Aircraft Modifications						E-6 Series Modifications					
Program Element for Code B Items:						Other Related Program Elements					
	Prior Years	ID Code	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	To Complete	Total
QTY		A									0
COST (In Millions)	779.8	A	56.1	48.2	19.7	11.5	17.6	59.7	69.2	232.5	1,294.1
<p>This line item funds modifications to E-6 "Take Charge and Move Out", TACAMO aircraft. The E-6A TACAMO is a manned airborne communications relay platform designed to provide a survivable, reliable, enduring airborne command and control communications link between the President, Secretary of Defense and U.S. strategic and non-strategic forces. The Navy and Air Force were directed to take actions necessary to incorporate Airborne Command Post (ABNCP) (OSIP 32-93) functions into the E-6A, which were completed in FY03. For FY04 and FY05, OSIP 32-93 will complete the additional requirements of the ADWS Program. The Multifunction Display System (MDS), OSIP 27-99, was approved as the solution to maintaining worldwide deployability due to changing Global Air Traffic Management/Global Air Navigation System standards. The Modified Miniature Receiver Terminal (MMRT), OSIP 10-01, began installs in FY02 to enhance command and control of the strategic forces. OSIP 07-02 corrects Safety and Follow On Test &amp; Evaluation (FOT&amp;E - Sep 98) deficiencies by replacing the Milstar Tactical Terminal Access Control (TAC) battery, upgrading the Aircraft Frequency Auto Parallel Unit (FRAPU) to allow proper power transfer from/to ground/aircraft power, updating the design of and fabricating new rewind machines and purchasing "off-the-shelf" power carts to provide adequate aircraft power for full mission checkout. OSIP 08-02 started in FY02 and includes a smoke detection system, replacement of fuel tank Kapton wiring and replacement of an uncertified Cartridge Activated Device (CAD) (explosive) for severing the Long Trailing Wire Antenna in emergencies. Technology Insertion (OSIP 03-04) addresses supportability, new technologies, systems updates and interoperability issues in the areas of: Mission Computer Set (MCS) hardware obsolescence, Video C4I for live Battlestaff conferencing, Morse code to ASCII text conversion, and the installation of Range Mode Extension in the MMRT for VLF community compatibility. OSIP XX-07, Service Life Extension Program (SLEP), is designed to extend the service life of the E-6 A/C to 2040+. OSIP XX-08, Mission Deficiencies replaces the Digital Airborne Intercommunication Switching Set (DAISS) and installs an Open System Architecture that will allow low cost modifications for emerging requirements. It also replaces the Mission Computer Set and adds automatic retransmit of voice messages and flat panel displays in the battle staff area. There will be an option for a UHF C3 system and increasing ground power and cooling capabilities for austere operations. The E-6B Mod (ADWS), Multifunction Display System and Modified Miniature Receive Terminal programs have been restructured to increase A/C availability, reduce fleet A/C configurations, reduce logistics costs, increase operational flexibility, maximize production effort and allow trainer modifications to be done concurrently.</p>											
<b>OSIP No.</b>	<b>Description</b>	<b>Prior Years</b>	<b>FY 2003</b>	<b>FY 2004</b>	<b>FY 2005</b>	<b>FY 2006</b>	<b>FY 2007</b>	<b>FY 2008</b>	<b>FY 2009</b>	<b>Complete</b>	<b>Total</b>
32-93	E-6B Mod	683.8	15.0	6.5	4.9						710.2
27-99	Multifunction Display System	87.4	28.1	28.5	10.7						154.7
10-01	E-6B Modified Mini Rcv Terminal	7.9	3.5	4.1							15.5
07-02	E-6 Mission Support	0.3	6.5	2.8		3.8	3.3	6.4	1.7		24.9
08-02	Safety Deficiencies	0.4	3.0	4.2	2.3	1.5	1.0	0.9	1.2		14.5
03-04	Tech Insertion			2.1	1.8	6.1	6.5	2.0	2.6		21.1
XX-07	SLEP						6.7	14.1	12.9	60.8	94.4
XX-08	Mission Deficiencies (Block I)							36.2	50.9	171.7	258.8
Total	E-6A Series	779.8	56.1	48.2	19.7	11.5	17.6	59.7	69.2	232.5	1,294.1

Exhibit P-3a

Individual Modification

MODIFICATION TITLE: E-6B Modifications (OSIP 32-93)

MODELS OF SYSTEMS AFFECTED: E-6A/E-6B

TYPE MODIFICATION: Capability

DESCRIPTION/JUSTIFICATION: Mission Needs Statement: E-6A TACAMO/Airborne Command Post (ABNCP) Consolidation Program, MO-40-88-93, dated 22 Sep 93, substantiates the transfer of avionics equipment from the Air Force EC-135 ABNCP platform to the Navy E-6A TACAMO aircraft. This program consolidates Joint Chiefs of Staff (JCS) Strategic Command and Control tasking into one survivable airborne strategic platform and achieves significant operations and maintenance savings of at least \$50M annually. The addition of the ABNCP mission to the TACAMO aircraft results in one platform having the ability to relay Emergency Action Messages from the President and Secretary of Defense to U. S. Strategic Forces and for COMSTRAT to directly execute command and control of those forces. Operational Requirements Document (ORD) 389-88-98, revised 14 Aug 98, supports modifications for the High Power Transmit Set, original ABNCP avionics systems and MILSTAR capabilities. These are encompassed in ECP CTAS-100R3. ORD 389-88-98, revised 14 Aug 98, incorporates newly identified requirements, including approved ECP RCS-100R1 for Voice Satellite (VOSAT) Communications and Engineering Change Proposals (ECPs) for Cryptographic (CRYPTO) equipment upgrades, Ultra High Frequency (UHF) Demand Assigned Multiple Access (DAMA) installation, Automated Data Processing Capability (ADP) and Weight Savings. VOSAT capability is a voice recognition system that is required by COMSTRAT for uncompromised communications. CRYPTO upgrade is required by COMSTRAT to ensure ABNCP receipt and distribution of encrypted messages in accordance with relay timing parameters. UHF DAMA is required for communications across the spectrum of Command and Control responsibilities. ADP capability is required by COMSTRAT for efficient operations by the embarked Battle Staff and for the capability to receive and generate encrypted and classified correspondence. The weight removal is required to offset the effects of other modifications on zero gross fuel weight parameters. The ADP, UHF DAMA and Weight Savings requirements are combined into the ADWS program and will apply to all 16 E-6s in the active fleet inventory. The ADWS program has been restructured to increase A/C availability, reduce fleet A/C configurations, reduce logistics costs, increase operational flexibility, maximize production effort and allow trainer modifications to be done concurrently. This modification program is not applicable to any aircraft in either the National Guard or the Reserves. TACLANE Crypto will also be installed through FY05.

DEVELOPMENT STATUS/MAJOR DEVELOPMENT MILESTONES: Milestone III decision on ABNCP modifications granted January 1995. Milestone III decision for Avionics Upgrade and HPTS granted December 1995. FOT&E completed June 1998. Initial Operating Capability (IOC) date of 1 October 1998 was met. September message from COMSTRAT delineated additional requirements and associated program cost growth resulted in E-6 program restructure with ABNCP Full Operating Capability shifting from January 2001 to February 2003. All ABNCP aircraft modifications have been completed. IOC for VOSAT modification was met 1 October 1998 and IOC for CRYPTO was met 1 July 2000. TACLANE Crypto will be completed by end of FY05. A contract was awarded for the ADWS program September 2000 with installation planned to be completed by end of FY05. E-6B Modification ADWS Program was extended to increase A/C availability, reduce fleet A/C configurations, reduce logistics costs, increase operational flexibility, maximize production effort and allow trainer modifications to be done concurrently.

FINANCIAL PLAN: (TOA, \$ in Millions)

	Prior Years		FY 2003		FY 2004		FY 2005		FY 2006		FY 2007		FY 2008		FY 2009		To Complete		Total	
	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$
RD&E	1	107.3																	1	107.3
PROCUREMENT																				
Installation Kits																				
HPTS Kit	16	19.7																	16	19.7
ABNCP Kit	15	55.9																	15	55.9
VOSAT Kit	16	0.3																	16	0.3
CRYPTO Kit	16	1.1																	16	1.1
SIL Kit	1	0.4																	1	0.4
LAB Kit	1	0.1																	1	0.1
ADWS Kit	16	10.6																	16	10.6
Installation Kits N/R		49.5																		49.5
Installation Equipment																				
HPTS/CFA Equip	18	139.3																	18	139.3
ABNCP Equip	15	31.1																	15	31.1
VOSAT Equip	16	2.2																	16	2.2
CRYPTO Equip	16	0.4																	16	0.4
Lab Equipment	1	*																	1	*
ADWS Equipment	16	10.5																	16	10.5
SIL Equipment	1	0.4																	1	0.4
MILSTAR Equip	7	38.1																	7	38.1
HPTS TIMING DIV Equip	19	5.8																	19	5.8
SDRS Equip	1	0.6																	1	0.6
TACLANE			4	*	8	0.1	7	0.1											19	0.3
Installation Equipment N/R		30.5																		30.5
Engineering Change Orders																				
Data		23.2																		23.2
Training Equipment	12	41.8																	12	41.8
Support Equipment		6.3		0.7		1.0														7.9
IJS		19.8		*																19.8
Other Support		110.4		3.5		0.6		0.6												115.0
Interim Contractor Support		1.1																		1.1
Installation Cost	77	85.0	7	10.8	7	4.8	5	4.2											96.0	104.8
<b>Total Procurement</b>		<b>683.8</b>		<b>15.0</b>		<b>6.5</b>		<b>4.9</b>												<b>710.2</b>

Notes:

1. Totals may not add due to rounding
2. Asterisk indicates amount less than \$50K
3. 1 ABCNP Prototype Kit procured in R&D.
4. Installation quantities include HPTS and ABNCP kits separately to account for kit purchases although they were combined for installation purposes in 1996.

**Exhibit P-3a**

MODELS OF SYSTEMS AFFECTED: E-6A/E-6B MODIFICATION TITLE: E-6B Modifications OSIP (32-93)

INSTALLATION INFORMATION:

METHOD OF IMPLEMENTATION: Contractor Drive-in/Field Modification

ADMINISTRATIVE LEADTIME: 1 Months PRODUCTION LEADTIME: Varies

CONTRACT DATES: FY 2003: \_\_\_\_\_ FY 2004: \_\_\_\_\_ FY 2005: \_\_\_\_\_

DELIVERY DATE: FY 2003: \_\_\_\_\_ FY 2004: \_\_\_\_\_ FY 2005: \_\_\_\_\_

(\$ in Millions)

Cost:	Prior Years		FY 2003		FY 2004		FY 2005		FY 2006		FY 2007		FY 2008		FY 2009		To Complete		TOTAL		
	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	
FY 2002 & PY (80) kits	62	79.4	7	10.8	6	3.8	5	4.2												80	98.2
FY 2003 ( ) kits																					
FY 2004 ( ) kits																					
FY 2005 ( ) kits																					
FY 2006 ( ) kits																					
FY 2007 ( ) kits																					
FY 2008 ( ) kits																					
FY 2009 ( ) kits																					
To Complete ( ) kits																					
<b>TOTAL</b>	<b>62</b>	<b>79.4</b>	<b>7</b>	<b>10.8</b>	<b>6</b>	<b>3.8</b>	<b>5</b>	<b>4.2</b>												<b>80</b>	<b>98.2</b>

Note: Total quantities and dollars do not include 12 trainers, 2 Labs and 2 SILs

HPTS Installation Schedule

	FY 2002 & Prior	FY 2003				FY 2004				FY 2005				FY 2006							
		1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4				
In	15			1																	
Out	14			1		1															

	FY 2007				FY 2008				FY 2009				To Complete	TOTAL
	1	2	3	4	1	2	3	4	1	2	3	4		
In														16
Out														16

ABNCP Installation Schedule

	FY 2002 & Prior	FY 2003				FY 2004				FY 2005				FY 2006			
		1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
In	15			1													
Out	14			1		1											

	FY 2007				FY 2008				FY 2009				To Complete	TOTAL
	1	2	3	4	1	2	3	4	1	2	3	4		
In														16
Out														16

VOSAT Schedule

	FY 2002 & Prior	FY 2003				FY 2004				FY 2005				FY 2006			
		1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
In	15			1													
Out	14			1		1											

	FY 2007				FY 2008				FY 2009				To Complete	TOTAL
	1	2	3	4	1	2	3	4	1	2	3	4		
In														16
Out														16

CRYPTO Installation Schedule

	FY 2002 & Prior	FY 2003				FY 2004				FY 2005				FY 2006			
		1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
In	15			1													
Out	15			1													

	FY 2007				FY 2008				FY 2009				To Complete	TOTAL
	1	2	3	4	1	2	3	4	1	2	3	4		
In														16
Out														16

ADWS Installation Schedule

	FY 2002 & Prior	FY 2003				FY 2004				FY 2005				FY 2006			
		1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
In	2		1		2	1	1	2	2	1	2	2					
Out			1	1	1	1	1	2	1	2	2	2	2				

	FY 2007				FY 2008				FY 2009				To Complete	TOTAL
	1	2	3	4	1	2	3	4	1	2	3	4		
In														16
Out														16

Exhibit P-3a Individual Modification

MODIFICATION TITLE: Multifunction Display System (OSIP 27-99)

MODELS OF SYSTEMS AFFECTED: E-6A/E-6B TYPE MODIFICATION: Capability

DESCRIPTION/JUSTIFICATION: Operational Requirements Document (ORD) 389-88-98, revised 14 Aug 98, requires installation of the Multifunction Display System (MDS). Current and future changes to Communications, Navigation and Surveillance/Air Traffic Management (CNS/ATM) required by Federal Aviation Administration/International Civil Aviation Origination (FAA/CAO) are satisfied by the installation of the MDS. Modifications to E-6 cockpit display system are required due to changes in the FAA/CAO Required Vertical Separation Minimums and other airspace restrictions. Analog gauges are becoming antiquated and difficult to maintain and require replacement in order to meet these and upcoming navigational changes. Incorporation of MDS into the cockpit will replace over 100 dials and gauges with integrated display screens that are customizable for the E-6. The MDS requires modification of a Commercial Off-the-Shelf (COTS) item to an E-6 configuration. Because it is similar to commercial equipment, any further modifications will be less costly. Upgrades to installed systems and changes to Mission Computer Systems can then be accomplished by changing software without changing the hardware. The MDS program has been restructured to increase A/C availability, reduce fleet A/C configurations, avoid \$16M logistics costs, increase operational flexibility, maximize production effort and allow trainer modifications to be done concurrently. GPS-A receiver controls are required to support currently installed military GPS receivers. Nav Table update gives the Navigator Station the ability to provide services during a degraded mission, and to support the E-6 Mission Commander and Battlestaff.

DEVELOPMENT STATUS/MAJOR DEVELOPMENT DEVELOPMENT STATUS/MAJOR DEVELOPMENT MILESTONES: MDS was granted a Milestone III decision on 5 May 1998. Contract award September 9, 1999. Specific and separate Non-Recurring Engineering (NRE) efforts for systems integration of COTS hardware/software occurred in the first two years. Production of NRE COTS article for E-6 configuration began October 2000 with subsequent installation and testing in February 2001. Production deliveries/installations funded through September 05. Funding provided via Program Decision Memorandum (PDM)-1 requires partial spread of NRE efforts. Cost growth from original estimates allows for 1 NRE A/C Kit/Installation, 15 Production A/C Kits/Installations and 1 Operational Flight Trainer Kit/Installation. Initial Operating Capability scheduled for March 2004. Increased cost and schedule requirements for modification of the Operational Flight Trainer (OFT) have required a Milestone Decision Authority (MDA) approved change #2 to the Acquisition Program Baseline (APB). This modification, approved 14 May 2001, provided additional funding for OFT #1 (by delaying aircraft modifications) and cut funding for OFT #2 in FY04 (funding to be used to complete remainder of aircraft modifications.) Subsequent program restructure and TOA realignment provides full funding for the program with Full Operational Capability (FOC) planned for 4thQ FY05. GPS-A receiver controls will be procured in FY03 and FY-04. The Nav Table Update NRE will start in FY04 with kit procurements and installations in FY04 through FY05.

FINANCIAL PLAN: (TOA, \$ in Millions)

	Prior Years		FY 2003		FY 2004		FY 2005		FY 2006		FY 2007		FY 2008		FY 2009		To Complete		Total		
	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	
RDT&E																					
PROCUREMENT																					
Installation Kits																					
Nav Update					16	0.8													16	0.8	
MDS Kit	8	6.4	1	0.8	7	5.3													16	12.4	
Installation Kits N/R		20.9		0.5		0.6															21.9
Installation Equipment																					
MDS Equip	8	46.1	1	9.1	7	10.3														16	65.5
Nav Update					16	1.6														16	1.6
GPS "A"			6	0.1	10	0.2														16	0.3
Installation Equipment N/R																					
Engineering Change Orders																					
Data		0.5																			0.5
Training Equipment		2.3	2	7.7	1	1.1														3	11.1
Support Equipment		*		0.1		*															0.2
ILS		1.3		0.1		0.1		0.1													1.6
Other Support		4.6		2.5		3.2		1.1													11.4
Interim Contractor Support																					
Installation Cost	2	5.4	5	7.2	16	5.3	12	9.6												35	27.4
<b>Total Procurement</b>		<b>87.4</b>		<b>28.1</b>		<b>28.5</b>		<b>10.7</b>													<b>154.7</b>

Notes:

1. Totals may not add due to rounding
2. Asterisk indicates amount less than \$50K
3. Trainer installation include; two in FY03, one in FY05

Exhibit P-3a

MODELS OF SYSTEMS AFFECTED: E-6A/E-6B MODIFICATION TITLE: Multifunction Display System, Nav Update (OSIP 27-99)

INSTALLATION INFORMATION:

METHOD OF IMPLEMENTATION: Contractor Drive In Modification

ADMINISTRATIVE LEADTIME: 1 Months PRODUCTION LEADTIME: Various Months

CONTRACT DATES: FY 2003: Apr-03 FY 2004: Various FY 2005:

DELIVERY DATE: FY 2003: Aug-04 FY 2004: Various FY 2005:

(\$ in Millions)

Cost:	Prior Years		FY 2003		FY 2004		FY 2005		FY 2006		FY 2007		FY 2008		FY 2009		To Complete		TOTAL		
	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	
FY 2002 & PY (8) kits	2	5.4	3	5.0	3	2.0														8	12.4
FY 2003 (1) kits					1	0.7														1	0.7
FY 2004 (23) kits					12	2.6	11	5.1												23	7.7
FY 2005 ( ) kits																					
FY 2006 ( ) kits																					
FY 2007 ( ) kits																					
FY 2008 ( ) kits																					
FY 2009 ( ) kits																					
To Complete ( ) kits																					
<b>TOTAL</b>	<b>2</b>	<b>5.4</b>	<b>3</b>	<b>5.0</b>	<b>16</b>	<b>5.3</b>	<b>11</b>	<b>5.1</b>												<b>32</b>	<b>20.7</b>

Note: Total quantities and dollars do not include three trainers  
GPS"A" does not require Install Kits or Installation.

MDS Installation Schedule

FY 2002 & Prior	FY 2003				FY 2004				FY 2005				FY 2006			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
In	2		1	2	1	1	2	2	1	2	2	2				
Out		1	1	1	1	1	2	1	2	2	2	2				

	FY 2007				FY 2008				FY 2009				To Complete	TOTAL
	1	2	3	4	1	2	3	4	1	2	3	4		
In														16
Out														16

Nav Table Installation Schedule

FY 2002 & Prior	FY 2003				FY 2004				FY 2005				FY 2006			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
In							4	6	6							
Out							3	6	5	2						

	FY 2007				FY 2008				FY 2009				To Complete	TOTAL
	1	2	3	4	1	2	3	4	1	2	3	4		
In														16
Out														16

Exhibit P-3a Individual Modification

MODIFICATION TITLE: Modified Miniature Receive Terminal (OSIP 10-01)

MODELS OF SYSTEMS AFFECTED: E-6A/E-6B TYPE MODIFICATION: Obsolescence

DESCRIPTION/JUSTIFICATION: The Air Force E-4B and the Navy E-6B comprise the World Wide Military Command and Control System (WWMCCS) Airborne Resources (WABNRES). They operate within the Nuclear Command and Control System (NCCS) serving principally as a survivable, reliable, endurable airborne command and control communications link between the President, Secretary of Defense and U.S. strategic and non-strategic forces. The WABNRES assets have a requirement to receive very low frequency/low frequency (VLF/LF) Emergency Action Messages (EAMs) and to communicate with one another in a nuclear jamming stressed environment. The Office of the Secretary of Defense (OSD) Strategic C3 Review of 3 September 1991 outlined a new strategic airborne command and control architecture. Key to this revised architecture is a modernization of the E-4B/E-6B VLF/LF capability to include the implementation of the High Data Rate (HIDAR) mode. As stated in the Joint Mission Need Statement for Very Low Frequency/Low Frequency (VLF/LF) receive capability for Strategic Command, Control, and Communications, CAF-NAV OPORD 330-92, the current VLF/LF receivers (R-2141) on the E-6B are outdated, and the R-616A cannot be modified to incorporate the HIDAR mode. The Modified Miniature Receive Terminal (MMRT) provides the E-6B with reliable VLF/LF receive capability that will insure interoperability and connectivity with the forces in support of the new Command, Control and Communication (C3) architecture. The MMRT program has been restructured to increase A/C availability, reduce fleet A/C configurations, reduce logistics costs, increase operational flexibility and maximize production effort. Part of the MMRT modification is to add an additional Computer Display, which has become obsolete

DEVELOPMENT STATUS/MAJOR DEVELOPMENT MILESTONES: Joint program with Air Force as lead Service. Preliminary Design Review completed. Critical Design Review completed March 1998. Prototype installation achieved October 1999. Contractor Test/Developmental Test achieved November/December 1999. Congress reduced FY00 funding to \$0 due to program slippage. Initial Operational Test and Evaluation complete 24 March 2000. MSIII decision 25 May 2000. Production contract August 2001. Installations to be completed in FY04.

FINANCIAL PLAN: (TOA, \$ in Millions)

	Prior Years		FY 2003		FY 2004		FY 2005		FY 2006		FY 2007		FY 2008		FY 2009		To Complete		Total		
	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	
RD&E																					
PROCUREMENT																					
Installation Kits																					
MMRT Install Kit	15	2.7																	15	2.7	
Flat Panel			8	0.1	8	0.1													16	0.2	
SIL	1	0.2																	1	0.2	
Refurbish Kit	1	*																	1	*	
Installation Kits N/R				0.1																	0.1
Installation Equipment																					
DKU Equip	9	0.2																	9	0.2	
Flat Panel			8	0.1	8	0.1													16	0.2	
Installation Equipment N/R																					
Engineering Change Orders																					
Data		*																			*
Training Equipment	2	1.2		0.2															2	1.4	
Support Equipment																					
ILS		0.2																			0.2
Other Support		0.4		0.3		1.6															2.3
Interim Contractor Support		0.1																			0.1
Installation Cost	2	2.8	12	3	21	2.3													35	7.9	
<b>Total Procurement</b>		<b>7.9</b>		<b>3.5</b>		<b>4.1</b>													<b>95</b>	<b>15.5</b>	

Note:

1. Totals may not add due to rounding
2. Asterisk indicates amount less than \$50K
3. First MMRT installation performed with Air Force RD&T money

Exhibit P-3a

MODELS OF SYSTEMS AFFECTED: E-6A/E-6B MODIFICATION TITLE: Modified Miniature Receive Terminal (OSIP 10-01)

INSTALLATION INFORMATION:

METHOD OF IMPLEMENTATION: Contractor Field Modification

ADMINISTRATIVE LEADTIME: 1 Months PRODUCTION LEADTIME: 2 Months

CONTRACT DATES: FY 2003: Jun-03 FY 2004: Nov-03 FY 2005: \_\_\_\_\_

DELIVERY DATE: FY 2003: Aug-03 FY 2004: Jan-04 FY 2005: \_\_\_\_\_

(\$ in Millions)

Cost:	Prior Years		FY 2003		FY 2004		FY 2005		FY 2006		FY 2007		FY 2008		FY 2009		To Complete		TOTAL		
	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	
FY 2002 & PY (15) kits	1	2.3	8	2.7	6	2.1														15	7.0
FY 2003 (8) kits			2	*	6	0.1														8	0.1
FY 2004 (8) kits					8	0.1														8	0.1
FY 2005 ( ) kits																					
FY 2006 ( ) kits																					
FY 2007 ( ) kits																					
FY 2008 ( ) kits																					
FY 2009 ( ) kits																					
To Complete ( ) kits																					
<b>TOTAL</b>	<b>1</b>	<b>2.3</b>	<b>10</b>	<b>2.7</b>	<b>20</b>	<b>2.3</b>														<b>31</b>	<b>7.2</b>

Note: Install schedule does not include four trainers

MMRT Installation Schedule

	FY 2002 & Prior	FY 2003				FY 2004				FY 2005				FY 2006							
		1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4				
In	1	2	2	2	2		3	2	1												
Out	1	2	2	2	1	1	2	2	2												

	FY 2007				FY 2008				FY 2009				To Complete	TOTAL
	1	2	3	4	3	4			1	2	3	4		
In														15
Out														15

Flat Panel Installation Schedule

	FY 2002 & Prior	FY 2003				FY 2004				FY 2005				FY 2006							
		1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4				
In				2		4	4	3	3												
Out				2		4	4	3	3												

	FY 2007				FY 2008				FY 2009				To Complete	TOTAL
	1	2	3	4	3	4			1	2	3	4		
In														16
Out														16

Exhibit P-3a Individual Modification

MODIFICATION TITLE: E-6 MISSION SUPPORT (OSIP 07-02)

MODELS OF SYSTEMS AFFECTED: E-6A/E-6B TYPE MODIFICATION: TYPE MODIFICATION: Capability

DESCRIPTION/JUSTIFICATION: The program will correct Follow-on Test & Evaluation (FOT&E) (Sep 98) deficiencies by funding for design update and fabrication of new rewind machines, purchase of "off-the-shelf" power carts to provide adequate aircraft power for full mission ground checkout, upgrade of the Frequency Referencing Auto Parallel Unit (FRAPU) to provide uninterrupted transfer of power from A/C to ground systems and replacement of aged Milstar Tactical Access Control (TAC) Batteries to ensure mission capability. There are currently too few rewind machines which are rapidly becoming unsupportable, resulting in the inability to replace the mission antenna at multiple locations when the Long Trailing Wire Antenna is lost. Current power carts do not provide adequate ground power causing system shutdown and failure of critical system components on A/C startup. Loss of Milstar battery power results in loss of Milstar capability.

DEVELOPMENT STATUS/MAJOR DEVELOPMENT MILESTONES: February 03 procure "off-the-shelf" power carts. February 03 contract award for NRE to update the design of rewind machines, replacing obsolete components with off-the-shelf technology, and start procurement. Additional units will be procured in FY04. FRAPU NRE and fabrication in FY06-FY08 with prototype installation aboard the E-6 A/C and validation/verification in FY06 -- Upgrade complete FY09. Milstar TAC Battery NRE and fabrication for proof of concept in FY08. Purchase for use aboard the E-6 A/C in FY08.

FINANCIAL PLAN: (TOA, \$ in Millions)

	Prior Years		FY 2003		FY 2004		FY 2005		FY 2006		FY 2007		FY 2008		FY 2009		To Complete		Total		
	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	
RDT&E																					
PROCUREMENT																					
Installation Kits																					
FRAPU																					
Installation Kits N/R																					
Installation Equipment																					
BATTERY TAC																					
FRAPU																					
Installation Equipment N/R																					
Engineering Change Orders																					
Data																					
Training Equipment																					
Support Equipment			6	6.4	2	2.6															
ILS																					
Other Support		0.3		0.2		0.1															
Interim Contractor Support																					
Installation Cost																					
<b>Total Procurement</b>		<b>0.3</b>		<b>6.5</b>		<b>2.8</b>															

- Notes:
1. Totals may not add due to rounding
  2. Asterisk indicates amount less than \$50K
  3. Includes an Electrical Trainer

Exhibit P-3a

MODELS OF SYSTEMS AFFECTED: E-6A/E-6B MODIFICATION TITLE: E-6 MISSION SUPPORT (OSIP 07-02)

INSTALLATION INFORMATION:

METHOD OF IMPLEMENTATION: Field Modification

ADMINISTRATIVE LEADTIME: Months PRODUCTION LEADTIME: Months

CONTRACT DATES: FY 2003: \_\_\_\_\_ FY 2004: \_\_\_\_\_ FY 2005: \_\_\_\_\_

DELIVERY DATE: FY 2003: \_\_\_\_\_ FY 2004: \_\_\_\_\_ FY 2005: \_\_\_\_\_

(\$ in Millions)

Cost:	Prior Years		FY 2003		FY 2004		FY 2005		FY 2006		FY 2007		FY 2008		FY 2009		To Complete		TOTAL		
	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	
FY 2002 & PY ( ) kits																					
FY 2003 ( ) kits																					
FY 2004 ( ) kits																					
FY 2005 ( ) kits																					
FY 2006 ( ) kits																					
FY 2007 ( ) kits																					
FY 2008 ( ) kits																					
FY 2009 ( ) kits																					
To Complete ( ) kits																					
TOTAL																					

- Note:1. Install dollars and quantities do not include one trainer.
- 2. TAC Batteries are not Support Equipment and do require Install Kits or Installs.

Installation Schedule: FRAPU

FY 2002 & Prior	FY 2003				FY 2004				FY 2005				FY 2006								
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4					
In																					
Out																					

	FY 2007				FY 2008				FY 2009				To Complete	TOTAL
	1	2	3	4	1	2	3	4	1	2	3	4		
In														
Out														

Exhibit P-3a Individual Modification

MODIFICATION TITLE: Correction of Safety Deficiencies

MODELS OF SYSTEMS AFFECTED: E-6/E-6A

TYPE MODIFICATION: TYPE MODIFICATION: Capability

DESCRIPTION/JUSTIFICATION: Correction of safety deficiencies for the protection of personnel and equipment. FAA APA 19-98 requires a smoke detection system in the aircraft lower avionics bays. The safety modification also replaces fuel tank Kapton wiring and an uncertified Cartridge Activated Device (CAD) (explosive) for severing the Long Trailing Wire Antenna under emergency conditions, installs new improved inertia reels and shoulder harnesses, provides the ability to transmit from the second Reel Operator's Intercom Communication System (ICS) position, replaces unsafe fuel boost pumps and corrects safety deficiencies in the aircraft auxiliary power unit. The program takes advantage of available and emerging commercial technology for crew/aircraft safety.

DEVELOPMENT STATUS/MAJOR DEVELOPMENT MILESTONES: ECP to modify existing equipment -- Contract awarded FY03 for APU, inertia reels and fuel boost pump. NRE for CAD completed in FY03 with fabrication and installation to take place in FY04 and FY05.

FINANCIAL PLAN: (TOA, \$ in Millions)

	Prior Years		FY 2003		FY 2004		FY 2005		FY 2006		FY 2007		FY 2008		FY 2009		To Complete		Total		
	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	
RDT&E																					
PROCUREMENT																					
Installation Kits																					
Smoke Detector					5	*	11	*													
Kapton Wire Fuel Pump																					
Reel Ops																					
APU			16	0.4																	
Fuel Boost Pumps			16	0.7																	
Installation Kits N/R		0.2				0.2															
Installation Equipment																					
Smoke Detector					5	0.4	11	0.8													
Kapton Wire Fuel Pump																					
HPTS CAD Cutters					16	1.0															
Reel Ops																					
Inertia Reels			16	0.4																	
Installation Equipment N/R				0.8		1.0															
Engineering Change Orders																					
Data				0.0		*		*													
Training Equipment					3	0.2		*													
Support Equipment							*														
ILS						0.2		0.2													
Other Support		0.2		0.6		0.2		0.2													
Interim Contractor Support							*														
Installation Cost					12	1.1	18	1.1													
<b>Total Procurement</b>		<b>0.4</b>		<b>3.0</b>		<b>4.2</b>		<b>2.3</b>													

Notes:

1. Totals may not add due to rounding
2. Asterisk indicates amount less than \$50K
3. No installs required for Fuel Boost Pumps and APU

**Exhibit P-3a**

MODELS OF SYSTEMS AFFECTED: E-6A/E-6B                      MODIFICATION TITLE: Correction Of Safety Deficiencies (OSIP 08-02)

INSTALLATION INFORMATION:

METHOD OF IMPLEMENTATION: Field Modification

ADMINISTRATIVE LEADTIME: 1 Months                      PRODUCTION LEADTIME: Various Months

CONTRACT DATES:                      FY 2003: Various                      FY 2004: Various                      FY 2005: Nov-04

DELIVERY DATE:                      FY 2003: Various                      FY 2004: Various                      FY 2005: Apr-05

Cost:	Prior Years		FY 2003		FY 2004		FY 2005		FY 2006		FY 2007		FY 2008		FY 2009		To Complete		TOTAL		
	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	
FY 2002 & PY ( ) kits																					
FY 2003 ( ) kits																					
FY 2004 ( ) kits					9	0.8	12	0.8													
FY 2005 ( ) kits							6	0.3													
FY 2006 ( ) kits																					
FY 2007 ( ) kits																					
FY 2008 ( ) kits																					
FY 2009 ( ) kits																					
To Complete ( ) kits																					
<b>TOTAL</b>					<b>9</b>	<b>0.8</b>	<b>18</b>	<b>1.1</b>													

Note: 1. Does not include 4 Trainers.

Smoke Detectors

FY 2002 & Prior	FY 2003				FY 2004				FY 2005				FY 2006			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
In									2	3	3	3				
Out									2	3	3	3				

	FY 2007				FY 2008				FY 2009				To Complete	TOTAL
	1	2	3	4			3	4	1	2	3	4		
In														
Out														

Reel Ops

	FY 2002 & Prior	FY 2003				FY 2004				FY 2005				FY 2006			
		1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
In																	
Out																	

	FY 2007				FY 2008				FY 2009				To Complete	TOTAL
	1	2	3	4			3	4	1	2	3	4		
In														
Out														

HPTS CAD Cutters

	FY 2002 & Prior	FY 2003				FY 2004				FY 2005				FY 2006			
		1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
In						3	3	3	3	3	3	1					
Out						3	3	3	3	3	3	1					

	FY 2007				FY 2008				FY 2009				To Complete	TOTAL
	1	2	3	4			3	4	1	2	3	4		
In														16
Out														16

Kapton Wire Fuel Pump

	FY 2002 & Prior	FY 2003				FY 2004				FY 2005				FY 2006			
		1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
In																	
Out																	

	FY 2007				FY 2008				FY 2009				To Complete	TOTAL
	1	2	3	4			3	4	1	2	3	4		
In														
Out														

Exhibit P-3a	Individual Modification
MODIFICATION TITLE:	<u>Technology Insertion (OSIP 03-04)</u>
MODELS OF SYSTEMS AFFECTED:	<u>E-6A/E-6B</u>
	TYPE MODIFICATION: <u>Capability</u>

DESCRIPTION/JUSTIFICATION: Funding to fix supportability/obsolescence issues, address interoperability issues, update systems and insert new technologies into the E-6 platform. With the E-6's 35 individual computer based communications and mission systems, Technology Insertion addresses supportability, new technologies, systems updates and interoperability issues in the areas of: Mission Computer Set (MCS) hardware obsolescence, Video C4I for live Battlestaff conferencing, Morse code to ASCII text conversion, and the installation of Range Mode Extension (REM) in the MMRT for VLF community compatibility. The MCS is rapidly becoming unsupported. Intervention is required to ensure this mission critical system continues to operate. Providing video conferencing for the Battlestaff supports required Network Centric Warfare real time data relay and decision-making processes. The E-6 is required to relay Morse code transmissions from the Strategic Submarine Forces to Command Level decision makers in the text readable format to be supplied by the Morse code to ASCII converter. The installation of REM into MMRT ensures E-6 communications compatibility with the remainder of the VLF community.

DEVELOPMENT STATUS/MAJOR DEVELOPMENT MILESTONES: FY04 contract awards for NRE to update MCS hardware and software with kit buy and installation beginning in FY06 and completing in FY07. Morse Code conversion NRE contract in FY06 with fabrication and installation in FY06. C4I NRE contract in FY06 with fabrication and installation in FY06. REM NRE contract in FY07 with fabrication in FY08 and installation in FY09.

FINANCIAL PLAN: (TOA, \$ in Millions)

	Prior Years		FY 2003		FY 2004		FY 2005		FY 2006		FY 2007		FY 2008		FY2009		To Complete		Total		
	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	
RDT&E																					
PROCUREMENT																					
Installation Kits																					
HF Morse Converter																					
C4I																					
REM																					
LAB																					
SIL																					
UPS																					
Installation Kits N/R																					
Installation Equipment																					
HF Morse Converter																					
C4I																					
REM																					
LAB																					
SIL																					
MCS																					
Auto DIN Modem																					
Auto DIN Mode-1																					
FMCS																					
UPS																					
Installation Equipment N/R							1.9		1.7												
Engineering Change Orders																					
Data																					
Training Equipment																					
Support Equipment																					
ILS																					
Other Support							0.1		0.1												
Interim Contractor Support																					
Installation Cost																					
<b>Total Procurement</b>							<b>2.1</b>		<b>1.8</b>												

Notes:

1. Totals may not add due to rounding
2. Asterisk indicates amount less than \$50K
3. MCS require no Installation Kits.
4. Includes SIL and MAS trainers

Exhibit P-3a

MODELS OF SYSTEMS AFFECTED: E-6A/E-6B MODIFICATION TITLE: Technology Insertion (OSIP 03-04)

INSTALLATION INFORMATION:

METHOD OF IMPLEMENTATION: Field Modification

ADMINISTRATIVE LEADTIME: Months PRODUCTION LEADTIME: Months

CONTRACT DATES: FY 2002: \_\_\_\_\_ FY 2003: \_\_\_\_\_ FY 2004: \_\_\_\_\_ FY 2005: \_\_\_\_\_

DELIVERY DATE: FY 2002: \_\_\_\_\_ FY 2003: \_\_\_\_\_ FY 2004: \_\_\_\_\_ FY 2005: \_\_\_\_\_

(\$ in Millions)

Cost:	Prior Years		FY 2003		FY 2004		FY 2005		FY 2006		FY 2007		FY 2008		FY 2009		To Complete		TOTAL		
	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	
FY 2002 & PY ( ) kits																					
FY 2003 ( ) kits																					
FY 2004 ( ) kits																					
FY 2005 ( ) kits																					
FY 2006 ( ) kits																					
FY 2007 ( ) kits																					
FY 2008 ( ) kits																					
FY 2009 ( ) kits																					
To Complete ( ) kits																					
TOTAL																					

Note: MCS do not require Install Kits.  
Does not include the 1 SIL or 6 Trainers Installs

MCS

FY 2002 & Prior	FY 2003				FY 2004				FY 2005				FY 2006								
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4					
In																					
Out																					

1	FY 2007			FY 2008		FY 2009				To Complete	TOTAL
	2	3	4	3	4	1	2	3	4		
In											
Out											

UPS

FY 2002 & Prior	FY 2003				FY 2004				FY 2005				FY 2006								
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4					
In																					
Out																					

1	FY 2007			FY 2008		FY 2009				To Complete	TOTAL
	2	3	4	3	4	1	2	3	4		
In											
Out											

C4I

FY 2002 & Prior	FY 2003				FY 2004				FY 2005				FY 2006								
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4					
In																					
Out																					

1	FY 2007			FY 2008		FY 2009				To Complete	TOTAL
	2	3	4	3	4	1	2	3	4		
In											
Out											

Morse Converter

	FY 2002 & Prior	FY 2003				FY 2004				FY 2005				FY 2006			
		1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
In																	
Out																	

	FY 2007				FY 2008				FY 2009				To Complete	TOTAL
	1	2	3	4		3	4	1	2	3	4			
In														
Out														

FMCS Single Board

	FY 2002 & Prior	FY 2003				FY 2004				FY 2005				FY 2006			
		1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
In																	
Out																	

	FY 2007				FY 2008				FY 2009				To Complete	TOTAL
	1	2	3	4		3	4	1	2	3	4			
In														
Out														

REM

	FY 2002 & Prior	FY 2003				FY 2004				FY 2005				FY 2006			
		1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
In																	
Out																	

	FY 2007				FY 2008				FY 2009				To Complete	TOTAL
	1	2	3	4		3	4	1	2	3	4			
In														
Out														

<b>Exhibit P-40, BUDGET ITEM JUSTIFICATION</b>										DATE: <b>February 2004</b>		
APPROPRIATION/BUDGET ACTIVITY <b>Aircraft Procurement, Navy/APN-5 Aircraft Modifications</b>						P-1 ITEM NOMENCLATURE <b>Executive Helicopter Modifications</b>						
Program Element for Code B Items:						Other Related Program Elements						
	Prior Years	ID Code		FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	To Complete	Total
QTY		A										
COST (In Millions)	126.9	A		15.7	26.3	21.8	17.4	15.8	16.2	16.5	23.8	280.4
<p>This line item funds modifications to the (11) VH-3D and (8) VH-60N Executive Helicopters. These aircraft are assigned to Marine Helicopter Squadron One to support the President of the United States. The Communications/Navigation/Survivability modification to both the VH-3D and VH-60N consists of a communications system upgrade to provide communications commonality between Executive Helicopters, Air Force One, and N-Cap, Traffic Collision Avoidance System (TCAS), VH-60 Maintenance Trainer, TACAN Upgrade, GPS Upgrade; and a tailored electronic warfare (EW) suite. The VH-60N Cockpit consists of an upgrade to an all-glass instrumentation. The Communication Suite Upgrade consists of SATCOM radio upgrade, Digital FM radio upgrade, HF radio upgrade, and Data Transfer capability upgrade. The overall goal of modifications budgeted in FY 2005 is to continue procurement efforts in accordance with the planned procurement strategy implemented during FY 1993.</p> <p>The specific modifications budgeted and programmed are:</p>												
(TOA, \$ in Millions)												
<u>OSIP No.</u>	<u>Description</u>	<u>Prior Years</u>		<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>	<u>FY 2008</u>	<u>FY 2009</u>	<u>To Complete</u>	<u>Total</u>
22-93	Executive Helicopter Survivab	121.0		2.8	4.1	0.6						128.5
09-02	VH-60N Cockpit Upgrade	3.0		1.7	12.6	10.7	10.2	10.3	13.5	16.5	23.8	102.3
14-02	Communication Suite Upgrade	2.8		11.2	9.7	10.5	7.2	5.5	2.7			49.6
	DERF (non add)	10.1										
<b>Total</b>		<b>126.9</b>		<b>15.7</b>	<b>26.3</b>	<b>21.8</b>	<b>17.4</b>	<b>15.8</b>	<b>16.2</b>	<b>16.5</b>	<b>23.8</b>	<b>280.4</b>
<b>Note: Totals may not add due to rounding.</b>												
<b>*FY02 DERF funding augments OSIP 14-02, Communication Suite Upgrade</b>												



FINANCIAL PLAN: (TOA, \$ in Millions)																				
	Prior Years		FY 2003		FY 2004		FY 2005		FY 2006		FY 2007		FY 2008		FY2009		To Complete		Total	
	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$
RDT&E																				
PROCUREMENT																				
Installation Kits																				
VH-3D Survivability Kit	12	11.9																	12	11.9
VH-60N Survivability Kit	9	5.7																	9	5.7
VH-3D TCAS Kit	11	1.6																	11	1.6
VH-60N Auto Ignition Kit	8	1.1																	8	1.1
Installation Kits N/R		20.4																		20.4
Installation Equipment																				
ALQ-144	19	2.4																	19	2.4
MUST Radio	3	0.3																	3	0.3
ALE-47 MLVS		0.1																		0.1
ALE-47	11	0.7																	11	0.7
VH-3D TCAS	11	0.9																	11	0.9
APX-100 Upgrade	1	0.1	18	0.4															19	0.5
FM Immunity VH-3D	11	0.2																	11	0.2
FM Immunity VH-60N	8	0.1																	8	0.1
APR-39A(V)2						0.6														0.6
Installation Equipment N/R		7.7																		7.7
Engineering Change Orders		0.1																		0.1
Data		4.1				0.4														4.5
Training Equipment		20.6			2	1.2													2	21.8
Support Equipment		1.2			3	0.5													3	1.7
ILS		1.0																		1.0
Other Support		22.3		1.4		0.8		0.3												24.8
Interim Contractor Support																				
Installation Cost	53	18.4	3	0.9	2	0.6	1	0.3											59	20.2
<b>Total Procurement</b>		<b>121.0</b>		<b>2.8</b>		<b>4.1</b>		<b>0.6</b>												<b>128.5</b>

Notes:

1. Totals may not add due to rounding
2. Asterisk indicates amount less than \$50K

Exhibit P-3a

MODELS OF SYSTEMS AFFECTED: VH-3D/VH-60N MODIFICATION TITLE: EXECUTIVE HELICOPTER SURVIVABILITY PROGRAM

INSTALLATION INFORMATION:

METHOD OF IMPLEMENTATION: ALQ-144 Phase Lock kits will be installed as Drive-In Mod. Survivability kits (AAR-47, APR-39, AVR-2 and ALE-47) will be installed on VH-3D and VH-60N during SPAR. Collision avoidance warning systems are currently being evaluated and will be incorporated during SPAR. (All turn-key in FY 1996 and prior fiscal years.)

ADMINISTRATIVE LEADTIME: 9 Months PRODUCTION LEADTIME: 12 Months

CONTRACT DATES: FY 2003: \_\_\_\_\_ FY 2004: \_\_\_\_\_ FY 2005: \_\_\_\_\_

DELIVERY DATE: FY 2003: \_\_\_\_\_ FY 2004: \_\_\_\_\_ FY 2005: \_\_\_\_\_

(\$ in Millions)

Cost:	Prior Years		FY 2003		FY 2004		FY 2005		FY 2006		FY 2007		FY 2008		FY 2009		To Complete		TOTAL		
	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	
FY 2002 & PY (59) kits	53	18.4	3	0.9	2	0.6	1	0.3												59	20.2
FY 2003 ( ) kits																					
FY 2004 ( ) kits																					
FY 2005 ( ) kits																					
FY 2006 ( ) kits																					
FY 2007 ( ) kits																					
FY 2008 ( ) kits																					
FY 2009 ( ) kits																					
To Complete ( ) kits																					
<b>TOTAL</b>	<b>53</b>	<b>18.4</b>	<b>3</b>	<b>0.9</b>	<b>2</b>	<b>0.6</b>	<b>1</b>	<b>0.3</b>												<b>59</b>	<b>20.2</b>

Installation Schedule -VH-3D Survivability

	FY 2002 & Prior	FY 2003				FY 2004				FY 2005				FY 2006				FY 2007				
		1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	
In	12																					
Out	12																					

	FY 2008				FY 2009				To Complete	Total
	1	2	3	4	1	2	3	4		
In										12
Out										12

Installation Schedule - VH-60 Survivability

	FY 2002 & Prior	FY 2003				FY 2004				FY 2005				FY 2006				FY 2007							
		1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4				
In	9																								
Out	9																								

	FY 2008				FY 2009				To Complete	Total
	1	2	3	4	1	2	3	4		
In										9
Out										9

Exhibit P-3a

MODELS OF SYSTEMS AFFECTED: VH-3D MODIFICATION TITLE: EXECUTIVE HELICOPTER SURVIVABILITY PROGRAM

INSTALLATION INFORMATION:

METHOD OF IMPLEMENTATION: Collision avoidance warning systems will be incorporated during SPAR.

ADMINISTRATIVE LEADTIME: 2 Months PRODUCTION LEADTIME: 16 Months

CONTRACT DATES: FY 2003: \_\_\_\_\_ FY 2004: \_\_\_\_\_ FY 2005: \_\_\_\_\_

DELIVERY DATE: FY 2003: \_\_\_\_\_ FY 2004: \_\_\_\_\_ FY 2005: \_\_\_\_\_

Installation Schedule - VH-3D TCAS

	FY 2002 & Prior	FY 2003				FY 2004				FY 2005				FY 2006				FY 2007							
		1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4				
In	5		1	1	1		1	1		1															
Out	2	1	1	1		1	1	1			1	1	1												

	FY 2008				FY 2009				To Complete	Total
	1	2	3	4	1	2	3	4		
In										11
Out										11

Exhibit P-3a Individual Modification

MODIFICATION TITLE: VH-60N Cockpit Upgrade (OSIP 09-02)

MODELS OF SYSTEMS AFFECTED: VH-60N TYPE MODIFICATION: SAFETY

DESCRIPTION/JUSTIFICATION: In order to meet the requirement of providing safe and timely transportation for the President, Vice President, and other parties as directed by the Director of the White House Military Office (WHMO) in support of the alert and contingency mission requirement of the WHMO Operations plan, the VH-60N aircraft cockpit must be upgraded to provide enhanced communication and navigation capabilities while reducing pilot workload. The cockpit upgrade should be an all-glass instrumentation built around multi-function pilot workload. A moving map display complete with terrain database should be incorporated, while maintaining the current capabilities of TACAN, VOR, ILS, ADF, TCAS, CSFIR, FM Immunity, and Mode S IFF. The navigation system should include laser ring gyros with embedded GPS that has integrity monitoring/IFR certification. A color radar with stormscope should be incorporated. Communication capabilities must be consistent with WHCA (White House Communications Agency) planning and NSA requirements. Three UHF/VHF/FM radios shall be included. Four FM radios, SATCOM, HF with ALE currently on the VH-60N must be maintained. A coupled autopilot function shall be incorporated into the cockpit management system.

DEVELOPMENT STATUS/MAJOR DEVELOPMENT MILESTONES: Program was approved as an ACAT IV-T program in July 2001. A Milestone B decision was approved in November 2003. Non-Recurring Engineering (NRE) for the cockpit ugrade began in FY 2002 with a prototype kit scheduled for FY 2006. Installation of 1st production kit will begin in FY2007. Development and Operational Testing is scheduled for FY 2007/8. Initial Operating Capability is scheduled for FY 2008 with Full Operating Capability scheduled for FY 2011.

FINANCIAL PLAN: (TOA, \$ in Millions)

	Prior Years		FY 2003		FY 2004		FY 2005		FY 2006		FY 2007		FY 2008		FY2009		To Complete		Total		
	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	
RDT&E																					
PROCUREMENT																					
Installation Kits																					
VH-60N Cockpit Upgrade Kit																					
Installation Kits N/R		2.5		0.6		12.1		7.8													
Installation Equipment																					
Installation Equipment N/R																					
Engineering Change Orders								2.5													
Data																					
Training Equipment																					
Support Equipment																					
ILS																					
Other Support		0.5		1.1		0.5		0.5													
Interim Contractor Support																					
Installation Cost																					
<b>Total Procurement</b>		<b>3.0</b>		<b>1.7</b>		<b>12.6</b>		<b>10.7</b>													

Notes:

1. Totals may not add due to rounding
2. Asterisk indicates amount less than \$50K

**Exhibit P-3a**

MODELS OF SYSTEMS AFFECTED: VH-60N MODIFICATION TITLE: \_\_\_\_\_

INSTALLATION INFORMATION:

METHOD OF IMPLEMENTATION: Installation of Cockpit Upgrade during SPAR.

ADMINISTRATIVE LEADTIME: \_\_\_\_\_ Months PRODUCTION LEADTIME: \_\_\_\_\_ Months

CONTRACT DATES: FY 2003: \_\_\_\_\_ FY 2004: \_\_\_\_\_ FY 2005: \_\_\_\_\_

DELIVERY DATE: FY 2003: \_\_\_\_\_ FY 2004: \_\_\_\_\_ FY 2005: \_\_\_\_\_

(\$ in Millions)

Cost:	Prior Years		FY 2003		FY 2004		FY 2005		FY 2006		FY 2007		FY 2008		FY 2009		To Complete		TOTAL		
	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	
FY 2002 & PY ( ) kits																					
FY 2003 ( ) kits																					
FY 2004 ( ) kits																					
FY 2005 ( ) kits																					
FY 2006 ( ) kits																					
FY 2007 ( ) kits																					
FY 2008 ( ) kits																					
FY 2009 ( ) kits																					
To Complete ( ) kits																					
TOTAL																					

Installation Schedule

FY 2002 & Prior	FY 2003				FY 2004				FY 2005				FY 2006				FY 2007				
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	
In																					
Out																					

	FY 2008				FY 2009				To Complete	Total
	1	2	3	4	1	2	3	4		
In										
Out										

Exhibit P-3a Individual Modification

MODIFICATION TITLE: Communication Suite Upgrade (OSIP 14-02)

MODELS OF SYSTEMS AFFECTED: VH-60N/VH-3D TYPE MODIFICATION: SAFETY

DESCRIPTION/JUSTIFICATION: JCS Directive MJCS-63-89 states that all access to UHF SATCOM will use demand assigned multiple access (DAMA). The White House Communication Agency (WHCA) has directed that all White House Military Organization (WHMO) elements be connected and have the ability to operate in the DAMA mode by the year 2005. WHCA has also directed that all WHMO elements have the ability to operate in the High Frequency/Automatic Link Establishment (HF/ALE) mode by the year 2007. Additionally, the WHMO directed the upgrade to the data transfer computer and printer on board the VH-60N which is required to transmit, receive, and print secure data files via the SATCOM and HF radios. Satisfaction of the DAMA SATCOM requirement will require the incorporation of 2 DAMA capable radios in each aircraft to satisfy the need for full duplex communication. OFP software will be modified by NAWC-AD to allow the new system to work in the aircraft. An install kit will be built to house the radio and equipment and then installed in the aircraft. Satisfaction of the Data Transfer Computer/Printer requirement will require the procurement of a compatible, TEMPEST certified data transfer computer and printer. OFP software will be modified by NAWC-AD to allow the new equipment to operate in the aircraft. This is to be an operational level install. To satisfy the HF/ALE requirement will require a software modification to the OFP to enable the current HF radio to utilize this function. OFP software will be modified by NAWC-AD. WHMO has also directed that FM radios operate in the digital mode.

DEVELOPMENT STATUS/MAJOR DEVELOPMENT MILESTONES: This program was approved as an Abbreviated Acquisition Program in July 2001. Program was upgrade to ACAT IV-M in March 2003. DAMA SATCOM upgrade will be performed between FY-2002 through FY-2008. Installations are performed in conjunction with scheduled depot maintenance. VAL/VER will be performed on the delivery of the first production VH-3D and VH-60N. This is planned for FY-2005. HF/ALE modification will be performed between FY-2005 through FY-2008 with a Val/Ver scheduled for FY-2007. The Data Transfer capability modification will be performed between FY-2003 through FY-2005 with a Val/Ver in FY-2005. Performance testing and EMC/EMI testing will be performed by NAWC-AD. Val/Ver will be performed by HMX-1 to ensure interoperability with all WHMO elements. Digital FM capability will be performed between FY 2003 through FY 2005, with a Val/Ver in FY 2004.

FINANCIAL PLAN: (TOA, \$ in Millions)

	Prior Years		FY 2003		FY 2004		FY 2005		FY 2006		FY 2007		FY 2008		FY2009		To Complete		Total		
	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	
RDT&E																					
PROCUREMENT																					
Installation Kits																					
VH-3D SATCOM			5	0.9			1	0.1													
VH-60 SATCOM					3	0.6	2	0.4													
VH-60N DTC/P																					
DIGITAL FM			19	1.0	9	0.9															
SATCOM (O-level)						0.3															
Installation Kits N/R		11.3		3.2		3.1		1.0													
Installation Equipment	14	0.7	39	1.4	3	0.5															
Installation Equipment N/R				0.6		0.9		1.0													
Engineering Change Orders								1.8													
Data				0.9		0.6		0.3													
Training Equipment			4	0.3	1	0.6		0.5													
Support Equipment						0.1		0.2													
ILS				0.1				1.0													
Other Support		0.9		2.9		1.6		1.8													
Interim Contractor Support																					
Installation Cost					1	0.6	4	2.4													
<b>Total Procurement</b>		<b>12.9</b>		<b>11.2</b>		<b>9.7</b>		<b>10.5</b>													

Notes:

1. Totals may not add due to rounding
2. Asterisk indicates amount less than \$50K

Exhibit P-3a

MODELS OF SYSTEMS AFFECTED: VH-60NVH-3D MODIFICATION TITLE: \_\_\_\_\_

INSTALLATION INFORMATION:

METHOD OF IMPLEMENTATION: Installation of Comm Suite Upgrade during SPAR.

ADMINISTRATIVE LEADTIME: 3 Months PRODUCTION LEADTIME: 9 Months

CONTRACT DATES: FY 2003: Jan-03 FY 2004: Jan-04 FY 2005: Jan-05

DELIVERY DATE: FY 2003: Sep-03 FY 2004: Sep-04 FY 2005: Sep-05

(\$ in Millions)

Cost:	Prior Years		FY 2003		FY 2004		FY 2005		FY 2006		FY 2007		FY 2008		FY 2009		To Complete		TOTAL		
	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	
FY 2002 & PY ( ) kits																					
FY 2003 ( ) kits					1	0.6	2	1.2													
FY 2004 ( ) kits							2	1.2													
FY 2005 ( ) kits																					
FY 2006 ( ) kits																					
FY 2007 ( ) kits																					
FY 2008 ( ) kits																					
FY 2009 ( ) kits																					
To Complete ( ) kits																					
<b>TOTAL</b>					<b>1</b>	<b>0.6</b>	<b>4</b>	<b>2.4</b>													

Installation Schedule

FY 2002 & Prior	FY 2003				FY 2004				FY 2005				FY 2006				FY 2007			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
In								1	1	1	1	1								
Out											1	1								

	FY 2008				FY 2009				To Complete	Total
	1	2	3	4	1	2	3	4		
In										
Out										

CLASSIFICATION: UNCLASSIFIED

BUDGET ITEM JUSTIFICATION SHEET P-40					DATE: February 2004						
APPROPRIATION/BUDGET ACTIVITY Aircraft Procurement, Navy/APN-5 Aircraft Modifications					P-1 ITEM NOMENCLATURE Special Project Aircraft						
Program Element for Code B Items:					Other Related Program Elements						
	Prior Years	ID Code	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	To Complete	Total
QUANTITY											
COST (In Millions)	106.1		10.8	56.1	12.4	20.7	14.2	14.5	14.7		249.6
<p>The Special Projects program modifies and/or replaces obsolete intelligence collection equipment as required in (4) P-3 aircraft. Procurements vary in each fiscal year and include common Navy systems for increased capability, reduced operator workload and common logistics. Active PAA inventory is 4 and there are currently 4 aircraft in the Special Mission inventory. They have an average service life of 29.5 years and the first aircraft reached end of service in 2001, the second in 2002. Two replacement aircraft delivered in FY 2001 and prior, one replacement aircraft delivered Aug 02, and the second replacement aircraft delivered Dec 03. The specific modifications budgeted and programmed are:</p>											
<u>OSIP No.</u>	<u>Description</u>	<u>Prior Years</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>	<u>FY 2008</u>	<u>FY 2009</u>	<u>To Complete</u>	<u>Total</u>
18-97	P-3 Special Project Aircraft	74.4									74.4
19-97	P-3 Intelligence Sensors/Systems	31.8	10.8	56.1	12.4	20.7	14.2	14.5	14.7		175.2
TOTAL		106.1	10.8	56.1	12.4	20.7	14.2	14.5	14.7		249.6
<p>Note: Totals may not add due to rounding. The FY03-07 DERF funding augments OSIP 19-97, Improved Comm &amp; Collection Capabilities</p>											

CLASSIFICATION:

Exhibit P-3a INDIVIDUAL MODIFICATION

MODIFICATION TITLE P-3 Special Project Aircraft (OSIP 18-97)

MODELS OF SYSTEM AFFECTED: P-3B/C

TYPE MODIFICATION: Operational Improvement

DESCRIPTION/JUSTIFICATION:

- This modification replaces obsolete intelligence collection equipment in four P-3 Special Project aircraft by:
1. Replacement of two (2) P-3 Special Project aircraft that reach 100% FLE (fatigue life expenditure) in FY01.  
This effort includes upgrading two (2) existing aircraft to the same configuration and operational capability as the replacement P-3 Special Project aircraft.  
The increased capability is classified.
  2. Procurement of common Navy systems for increased capability, reduced operator workload and common logistics.
  3. Update of radio frequency distribution hardware for selected sensors.
  4. Conversion of interior and exterior of aircraft for future operations.

DEVELOPMENT STATUS/MAJOR DEVELOPMENT MILESTONES:

Approval for full production is not required.

FINANCIAL PLAN (TOA, \$ in Millions):

	Prior Years		FY 2003		FY 2004		FY 2005		FY 2006		FY 2007		FY 2008		FY 2009		To Complete		TOTAL		
	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	
RDT&E																					
PROCUREMENT																					
Installation Kits																					
P-3 System A (Mission Unique)	4	.5																		4	.5
P-3 System B (Mission Unique)																					
LESPA	4	.9																		4	.9
Replacement Aircraft	4	12.9																		4	12.9
Installation Kits N/R		7.2																			7.2
Installation Equipment		11.2																			11.2
Installation Equipment N/R		5.2																			5.2
Engineering Change Orders																					
Data		.3																			.3
Training Equipment		.2																			.2
Support Equipment																					
ILS		.9																			.9
Other Support		12.5																			12.5
Interim Contractor Support																					
Installation Cost	4	22.7																		4	22.7
TOTAL PROCUREMENT	12	74.4																		12	74.4

Notes:

1. Totals do not add due to rounding \* Installation of FY01-02 Mission Unique Installation Equipment and LESPA to be accomplished at field (O) level.
2. Asterisk indicates amount less than 51K

Exhibit P-3a

Exhibit P-3a

MODELS OF SYSTEMS AFFECTED: P-3B/C

MODIFICATION TITLE: P-3 Special Project Aircraft (OSIP 18-97)  
Replacement Aircraft / Block Mod

INSTALLATION INFORMATION:

METHOD OF IMPLEMENTATION: Contractor Drive In.

ADMINISTRATIVE LEADTIME: 6 Months

PRODUCTION LEADTIME: 18 Months

CONTRACT DATES: FY 2003: \_\_\_\_\_ FY 2004: \_\_\_\_\_ FY 2005: \_\_\_\_\_

DELIVERY DATE: FY 2003: \_\_\_\_\_ FY 2004: \_\_\_\_\_ FY 2005: \_\_\_\_\_

Cost:	Prior Years		FY 2003		FY 2004		FY 2005		FY 2006		FY 2007		FY 2008		FY 2009		To Complete		TOTAL		
	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	
FY 2002 & PY (4) kits	4	22.7																		4	22.7
FY 2003 () kits																					
FY 2004 () kits																					
FY 2005 () kits																					
FY 2006 () kits																					
FY 2007 () kits																					
FY 2008 () kits																					
FY 2009 () kits																					
To Complete () kits																					
<b>TOTAL</b>	<b>4</b>	<b>22.7</b>																		<b>4</b>	<b>22.7</b>

Installation Schedule

	FY 2002 & Prior	FY 2003				FY 2004				FY 2005				FY 2006				FY 2007				
		1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	
In	4																					
Out	3					1																

	FY 2008				FY 2009				To Complete	TOTAL
	1	2	3	4	1	2	3	4		
In										4
Out										4

Exhibit P-3a INDIVIDUAL MODIFICATION

MODIFICATION TITLE: P-3 Intelligence Sensors and Systems (OSIP 19-97)

MODELS OF SYSTEM AFFECTED: P-3B/C TYPE MODIFICATION: Operational Improvement

DESCRIPTION/JUSTIFICATION:  
 This modification replaces obsolete intelligence collection equipment in four P-3 Special Project aircraft by:

1. Installation and support of special mission equipment contained in OSIP 18-97.
2. Procurement of special mission equipment as directed by the Chief of Naval Operations.

DEVELOPMENT STATUS/MAJOR DEVELOPMENT MILESTONES:  
 Approval for full production is not required.

FINANCIAL PLAN (TOA, \$ in Millions):

	Prior Years		FY 2003		FY 2004		FY 2005		FY 2006		FY 2007		FY 2008		FY 2009		To Complete		TOTAL		
	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	
RDT&E																					
PROCUREMENT																					
Installation Kits	4	.7																			
Installation Kits N/R																					
Installation Equipment																					
Mission Unique Equipment		28.7		1.4		12.5		1.3													
Improved Comm & Collection Capabilities				3.0		16.6		4.0													
Installation Equipment N/R		.2		3.5		21.0		4.4													
Engineering Change Orders																					
Data				.1		.6		.2													
Training Equipment																					
Support Equipment																					
ILS				.4		.7		.5													
Other Support		1.7		2.4		4.8		2.0													
Interim Contractor Support																					
Installation Cost		.4																			
<b>TOTAL PROCUREMENT</b>	<b>4</b>	<b>31.8</b>		<b>10.8</b>		<b>56.1</b>		<b>12.4</b>													

Notes:

1. Totals do not add due to rounding
2. Asterisk indicates amount less than 51K
3. This OSIP also includes FY02-FY07 Defense Emergency Response Fund (DERF) funding for Improved Comm & Collection Capabilities in support of Operation Enduring Freedom.

Exhibit P-3a

Exhibit P-40, BUDGET ITEM JUSTIFICATION					DATE: <b>February 2004</b>						
APPROPRIATION/BUDGET ACTIVITY					P-1 ITEM NOMENCLATURE						
<b>Aircraft Procurement, Navy/APN-5 Aircraft Modifications</b>					<b>T-45 Series Modification</b>						
Program Element for Code B Items:					Other Related Program Elements						
	Prior Years	ID Code	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	To Complete	Total
QTY		A									
COST (In Millions)	78.8	A	21.7	22.2	44.2	42.7	34.3	38.8	33.3	62.8	378.8
<p>This line item funds modifications to T-45A aircraft. The T-45A Goshawk is a tandem-seat, carrier capable derivative of the existing British Aerospace Hawk aircraft powered by a single Rolls Royce Adour engine. It serves as the aircraft component of the T45TS integrated jet pilot training system which replaces the three decade old TA-4 and T-2 technology. The overall goal of the modifications budgeted in FY 2005 is to correct discrepancies and deficiencies discovered after delivery of the aircraft and to commence major upgrades to the aircraft cockpit, navigation system, and aircrew ejection seats. FY03 funded simulator is an analog conversion and will support production aircraft to be delivered to Kingsville in FY04. T-45 aircraft and simulators are facing critical avionics obsolescence and Diminishing Manufacturing Source (DMS) issues. OSIP 04-05 (Required Avionics Modernization Program (RAMP)) was established to convert the T-45As (analog) to the digital T-45C configuration.</p> <p>The designed service life of the aircraft is 14,400 hours with the average remaining service life of inventory aircraft estimated at 11,692 hours.</p> <p>The specific modifications budgeted and programmed are:</p>											
(TOA, \$ in Thousands)											
OSIP No.	Description	Prior Years	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	To Complete	Total
08-95	T45TS Correction of Deficiencies	65.7	10.0	12.6	17.2	12.6	6.6	6.1	5.9	35.2	171.8
16-96	T45TS Digital Cockpit	3.8	7.3								11.1
04-99	T45TS NACES P3I	9.3	0.3	0.1							9.7
11-02	Improved Directional Control		3.0	1.2	1.0	0.7					5.9
03-03	Engine Surge		1.1	4.5	3.5	3.3	3.3	4.0	4.0	3.2	27.0
10-04	T-45TS GPS			1.1	1.2	1.5	1.4	1.5	1.6	0.8	9.1
17-04	T45 RAMP/AVIONICS OBSOLESCENCE			2.7	21.3	24.5	23.0	27.2	21.9	23.6	144.2
	<b>Total</b>	78.8	21.7	22.2	44.2	42.7	34.3	38.8	33.3	62.8	378.8
<p>Note: Totals may not add due to rounding.            *Indicates amount less than 51K.</p>											

Exhibit P-3a	Individual Modification
MODIFICATION TITLE:	<u>T45TS Correction to Deficiencies (OSIP 8-95)</u>
MODELS OF SYSTEMS AFFECTED:	<u>T-45 Training System (T45TS)</u> TYPE MODIFICATION: <u>Safety, Reliability, Increased Service Life, Improved Mission Capabilities</u>
DESCRIPTION/JUSTIFICATION:	
<p><b>Ejection Seat Handle MB-9155</b>            Modification will standardize ejection seat firing handle to enhance aircrew safety. Incorporation will lower the seat bucket firing handle assembly to eliminate interference with flight controls. Installation of this ECP is in response to a F-18 mishap report that documented a safety deficiency and proposed recommendations relating to incidents of inadvertent ejection.</p>	
<p><b>Uncommanded Gear Extension: MDA-T45TS-TBDs</b>            Modification will increase travel of the landing gear control interconnect cable, increase cable friction, and change the gear selector valve actuation signal to only when the handle is in the full up or full down position. Installation of this ECP is in response to a T45TS Engineering Investigation that documented a deficiency and proposed recommendations relating to incidents of uncommanded landing gear extensions.</p>	
<p><b>Ground Training Systems: MDA-T45TS-TBDs</b>            Updates to the T-45 aircraft simulator to match evolving aircraft flight characteristics and software and academics enhancements to improve training capabilities. The following Ground Trainer Systems ECP's are included in the controls: Flap Actuation Simulators, Touch and Go Engine Surges, current and future Simulator Upgrades.</p>	
<p><b>Structural ECPs</b>            Modifications will incorporate changes to improve structural details to increase aircraft service life beyond 14,400 flight hours, per initial design specifications, to a projected 21,000 flight hours. During FSD testing of the T45 aircraft it was determined that incorporation of redesigned components applicable to the critical load paths will significantly increase the service life of the aircraft. This structural portion of this OSIP effects several structural components including, but not limited to: Wing Dolly, SS 02 Monitor Bracket, Horizontal Stabilizers, Frame 24 Crossbeams Lugs, Wing Leading Edge Redesign, Frame 29 Lower Flange, Uplock Beam Forward Attach, Slat Track Rib 5 Downstop Bolt, Frame 28/32 Boundary/Vert Fin, Inlet Close-Out Fuel, Airframe Engine Mount, Frame 21 Structure, MLG Bay Tilted &amp; Fasteners, Longitudinal Systems Viscous, Frame 20 Structures, Frame 12 Vertical Splice, NLF Trunnion Beam, Slat Actuator Fitting Angle, Structure Life Improvement, Speed Brake Upgrade, Engine Mount Link Option, Stabilizer Back-Up Structures, Fuselage/Frame 10 Door, and Fin Bracket Lever Box Assembly.</p>	
<p><b>Airframe ECP's</b>            Modifications to the airframe other than structural deficiencies are also required to ensure safety of flight, aero-performance and maintainability to enable satisfactory PTR levels. This Airframe OSIP affects several airframe components and their sub-assemblies including, but not limited to: front, center and aft fuselage components, landing gear, tail cone, wing, horizontal and vertical control surfaces, flaps, canopy/windscreen, hydraulic system, oxygen system, electrical system, fuel system, instrumentation systems, environmental controls, communications, navigation and emergency systems.</p>	
<p><b>Avionics</b>            Modifications to the Avionics will be required to update the Display unit, heads Up Display, and Global Positioning System and Inertial Navigation Assembly to enhance effectiveness of pilot training and avoid obsolescence. The Air Data Recorder improvements will increase available memory and allow monitoring of additional aircraft characteristics which will allow improved component tracking and increase service life. The following ECP's are part of the Avionics package of the aircraft and include: Air Data Recorder Upgrade (current and future), Gina Updates, Mission Display processor upgrades, Almanac Loading System upgrades, and GPS Upgrades.</p>	
<p><b>Engines</b>            Modifications will increase engine service life and correct safety related issues. These modifications include High Pressure Fuel Pump, Front Combustion Liner, High Pressure Compressor Ladder Assembly, Low Pressure Nozzle Guide Vanes, High pressure Nozzle Guide Vanes and a modification to address engine surge/compressor stall. Modification will increase the overhaul interval from 1000 starts to 2000 starts. This also addresses a T45TS Engineering Investigation that documented a deficiency with the combustor liner and oil galley. The Engine ECP's include the Dual Boost Pump, Low Pressure Nozzle Guide Vanes, High Pressure Nozzle Guide Vanes, HP Fuel Pump, Front Combustion Liners, Gas Turbine Starters, Engine Rising Idle, Engine Surges, and the Engine Ladder Assembly.</p>	

T45TS Correction to Deficiencies (OSIP 08-95)

FINANCIAL PLAN: (TOA, \$ in Millions)

	Prior Years		FY 2003		FY 2004		FY 2005		FY 2006		FY 2007		FY 2008		FY 2009		To Complete		Total		
	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	
RDT&E																					
PROCUREMENT																					
Installation Kits																					
Ejection Seat Handle MB-9155	112	.3																			
Uncommanded Gear Extension	35	.7																			
Ground Training Systems TBD's	40	2.3	9	.6																	
Structural ECP's	798	20.9	92	.9	26	1.7	24	.7													
Avionics	272	1.7			.4	56	1.2	116	2.4												
Airframe ECP's			15	1.3	21	1.7	39	3.4													
Engines	487	4.2	49	.6	52	.8	141	2.1													
Installation Kits N/R		3.7		.2		.1		.1													
Installation Equipment																					
Ejection Seat Handle MB-9155		.2																			
Uncommanded Gear Extension		.1																			
Ground Training Systems TBD's		.6		.1																	
Structural ECP's		.4		*		*		*													
Airframe ECP's				.4		.5		.5													
Avionics		1.1		.1		.1		.1													
Engines		2.0		*		*		*													
Installation Equipment N/R		2.0		.3		*		*													
Engineering Change Orders																					
Data		.8		.1		*		*													
Training Equipment		3.0		.5		*		*													
Support Equipment		.8		.1		*		*													
ILS																					
Other Support		1.1		.2		*		*													
Installation Cost	1,744	19.9	150	4.2	193	6.4	270	7.7													
<b>TOTAL PROCUREMENT</b>	<b>1,744</b>	<b>65.7</b>	<b>190</b>	<b>10.0</b>	<b>155</b>	<b>12.6</b>	<b>320</b>	<b>17.2</b>													

- Notes:
1. Totals may not add due to rounding.
  2. \*indicates amounts less than 51K

**Exhibit P-3a**

MODELS OF SYSTEM AFFECTED: T45TS MODIFICATION TITLE: T45TS Correction to Deficiencies (OSIP 08-95)  
 INSTALLATION INFORMATION:  
 METHOD OF IMPLEMENTATION: "I" and "D" Level Installation: Contractor Field Modification Team-Separate Contract  
 ADMINISTRATIVE LEADTIME: 6 Months PRODUCTION LEADTIME: 12 Months  
 CONTRACT DATES: FY 2003: N/A FY 2004: N/A FY 2005: N/A  
 DELIVERY DATE: FY 2003: N/A FY 2004: N/A FY 2005: N/A

(\$ in Millions)

Cost:	Prior Years		FY 2003		FY 2004		FY 2005		FY 2006		FY 2007		FY 2008		FY 2009		To Complete		TOTAL	
	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$
FY 2002 & PY ( ) kits	1,744	19.9																		
FY 2003 ( ) kits			150	4.2	40	1.6														
FY 2004 ( ) kits					153	4.8	2	0.6												
FY 2005 ( ) kits							268	7.2												
FY 2006 ( ) kits																				
FY 2007 ( ) kits																				
FY 2008 ( ) kits																				
FY 2009 ( ) kits																				
To Complete ( ) kits																				
<b>TOTAL</b>	<b>1,744</b>	<b>19.9</b>	<b>150</b>	<b>4.2</b>	<b>193</b>	<b>6.4</b>	<b>270</b>	<b>7.7</b>												

Installation Schedule

	FY 2002 & Prior	FY 2003				FY 2004				FY 2005				FY 2006			
		1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
In	1744	38	38	38	36	48	48	48	49	67	67	68	68				
Out	1744	38	38	38	36	48	48	48	49	67	67	68	68				

	FY 2007				FY 2008				FY 2009				To Complete	TOTAL
	1	2	3	4	1	2	3	4	1	2	3	4		
In														
Out														

Exhibit P-3a	Individual Modification																																																																																																																																																																																																																																																																																																																																																																																			
MODIFICATION TITLE:	T45TS Digital Cockpit (OSIP 16-96)																																																																																																																																																																																																																																																																																																																																																																																			
MODELS OF SYSTEMS AFFECTED:	T-45 TRAINING SYSTEM (T45TS) <span style="float: right;">TYPE MODIFICATION: PS SAFETY</span>																																																																																																																																																																																																																																																																																																																																																																																			
DESCRIPTION/JUSTIFICATION: The T45TS Digital Cockpit will add two multi-function displays (MFDs) per cockpit, associated cockpit controls, and a 1553 digital bus, integrating them with the existing head-Up display (HUD), the airborne data recorder (ADR), and a separately procured Global Positioning System/Inertial Navigation System (GINA). FY03 funded simulator is an analog conversion and will support production aircraft to be delivered to Kingsville in FY04.																																																																																																																																																																																																																																																																																																																																																																																				
DEVELOPMENT STATUS/MAJOR DEVELOPMENT MILESTONES: Approval for 3 simulators and 24 aircraft digital cockpits received in 1st quarter FY2002. Approval for FY04 and FY05 Avionics Obsolescence Effort received in 3rd quarter FY02.																																																																																																																																																																																																																																																																																																																																																																																				
FINANCIAL PLAN: (TOA, \$ in Millions)																																																																																																																																																																																																																																																																																																																																																																																				
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**Exhibit P-3a**  
 MODELS OF SYSTEMS AFFECTED: T45TS MODIFICATION TITLE: T45TS Digital Cockpit (OSIP 16-96)

INSTALLATION INFORMATION:  
 METHOD OF IMPLEMENTATION: Contractor field mod team

ADMINISTRATIVE LEADTIME: \_\_\_\_\_ Months PRODUCTION LEADTIME: \_\_\_\_\_ Months

CONTRACT DATES: FY 2003: \_\_\_\_\_ FY 2004: \_\_\_\_\_ FY 2005: \_\_\_\_\_

DELIVERY DATE: FY 2003: \_\_\_\_\_ FY 2004: \_\_\_\_\_ FY 2005: \_\_\_\_\_

(\$ in Millions)

Cost:	Prior Years		FY 2003		FY 2004		FY 2005		FY 2006		FY 2007		FY 2008		FY 2009		To Complete		TOTAL	
	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$
FY 2002 & PY ( ) kits	2	0.2																		
FY 2003 ( ) kits																				
FY 2004 ( ) kits																				
FY 2005 ( ) kits																				
FY 2006 ( ) kits																				
FY 2007 ( ) kits																				
FY 2008 ( ) kits																				
FY 2009 ( ) kits																				
To Complete ( ) kits																				
<b>TOTAL</b>	<b>2</b>	<b>0.2</b>																		

Notes:  
 1. Quantity totals include trainers

Installation Schedule

	FY 2002 & Prior	FY 2003				FY 2004				FY 2005				FY 2006						
		1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4			
In	2																			
Out	2																			

	FY 2007				FY 2008				FY 2009				To Complete	TOTAL
	1	2	3	4	1	2	3	4	1	2	3	4		
In														
Out														

Exhibit P-3a Individual Modification

MODIFICATION TITLE: T-45A NACES P3I (Navy Aircrew Common Ejection Seat Pre- Planned Product Improvement) (OSIP 04-99)

MODELS OF SYSTEMS AFFECTED: T-45A NACES GFE EJECTION SEATS TYPE MODIFICATION: PS SAFETY

**DESCRIPTION/JUSTIFICATION:**

An average of 15 Naval Aircrew fatalities occur each year from in-flight mishaps. Nearly half result from the seat ejecting crewmembers into the ground or water at low altitude and adverse attitudes. Because of their lighter throw weight, women are particularly susceptible to this and other ejection risks. A total of 137 aircraft (2 seats per A/C) and 6 trainers will be retrofitted. The NACES P3I program is divided into three phases of development and upon completion of each phase, existing aircraft seats will be modified with NACES retrofit kits.

Phase I - Current technology improvements to increase cockpit accommodation and reduce injury risk for all aircrew.

Phase II - Propulsion stability control to reduce the risk of major injury to less than 5% up to 600 knots.

Phase III - Stability control and surface avoidance capability for low altitudes, adverse attitudes, and out of control ejections.

Procurement of Phase I kits have been priced and are represented by this OSIP. Procurement costs for Phase II and III have not been determined.

**DEVELOPMENT STATUS/MAJOR DEVELOPMENT MILESTONES:**

Contract awarded third quarter FY 1997 for development and testing. ECP approval 19 May 1999. Contract awarded August 1999.

**FINANCIAL PLAN: (TOA, \$ in Millions)**

	Prior Years		FY 2003		FY 2004		FY 2005		FY 2006		FY 2007		FY 2008		FY 2009		To Complete		Total		
	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	
RDT&E																					
PROCUREMENT																					
Installation Kits	258	7.3																			
Installation Kits N/R		0.7																			
Installation Equipment																					
Installation Equipment N/R																					
Engineering Change Orders																					
Data		0.1																			
Training Equipment	6	0.2																			
Support Equipment		*																			
ILS																					
Other Support																					
Interim Contractor Support																					
Installation Cost	122	1.1	74	0.3	68	0.1															
<b>TOTAL PROCUREMENT</b>	<b>264</b>	<b>9.3</b>		<b>0.3</b>		<b>0.1</b>															

- Notes:
1. Totals may not add due to rounding
  2. Asterisk indicates amount less than \$50K

**Exhibit P-3a**

MODELS OF SYSTEMS AFFECTED: T-45A NACES GFE EJECTION SEATS MODIFICATION TITLE: T-45A NACES P3I (OSIP 04-99)

INSTALLATION INFORMATION:

METHOD OF IMPLEMENTATION: Contractor Installations

ADMINISTRATIVE LEADTIME: 6 Months PRODUCTION LEADTIME: 5 Months

CONTRACT DATES: FY 2003: \_\_\_\_\_ FY 2004: \_\_\_\_\_ FY 2005: \_\_\_\_\_

DELIVERY DATE: FY 2003: \_\_\_\_\_ FY 2004: \_\_\_\_\_ FY 2005: \_\_\_\_\_

(\$ in Millions)

Cost:	Prior Years		FY 2003		FY 2004		FY 2005		FY 2006		FY 2007		FY 2008		FY 2009		To Complete		TOTAL	
	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$
FY 2002 & PY ( ) kits	122	1.1	74	0.3	68	0.1														
FY 2003 ( ) kits																				
FY 2004 ( ) kits																				
FY 2005 ( ) kits																				
FY 2006 ( ) kits																				
FY 2007 ( ) kits																				
FY 2008 ( ) kits																				
FY 2009 ( ) kits																				
To Complete ( ) kits																				
<b>TOTAL</b>	<b>122</b>	<b>1.1</b>	<b>74</b>	<b>0.3</b>	<b>68</b>	<b>0.1</b>														

Installation Schedule

	FY 2002 & Prior	FY 2003				FY 2004				FY 2005				FY 2006						
		1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4			
In	122	18	18	19	19	17	17	17	17											
Out	122	18	18	19	19	17	17	17	17											

	FY 2007				FY 2008				FY 2009				To Complete	TOTAL	
	1	2	3	4	1	2	3	4	1	2	3	4			
In															
Out															



**Exhibit P-3a**

MODELS OF SYSTEMS AFFECTED: T-45 TRAINING SYSTEM (T45TS)                      MODIFICATION TITLE: T45TS IMPROVED DIRECTIONAL CONTROL (OSIP 11-02)

INSTALLATION INFORMATION:

METHOD OF IMPLEMENTATION: Contractor Field Mod Team

ADMINISTRATIVE LEADTIME: 4 Months                      PRODUCTION LEADTIME: 18 Months

CONTRACT DATES:                      FY 2003: May-03                      FY 2004: Jan-04                      FY 2005: \_\_\_\_\_

DELIVERY DATE:                      FY 2003: Oct-04                      FY 2004: Oct-05                      FY 2005: \_\_\_\_\_

(\$ in Millions)

Cost:	Prior Years		FY 2003		FY 2004		FY 2005		FY 2006		FY 2007		FY 2008		FY 2009		To Complete		TOTAL		
	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	
FY 2002 & PY ( ) kits																					
FY 2003 ( ) kits							96	1.0													
FY 2004 ( ) kits																					
FY 2005 ( ) kits																					
FY 2006 ( ) kits																					
FY 2007 ( ) kits																					
FY 2008 ( ) kits																					
FY 2009 ( ) kits																					
To Complete ( ) kits																					
<b>TOTAL</b>							<b>96</b>	<b>1.0</b>													

Installation Schedule

	FY 2002 & Prior	FY 2003				FY 2004				FY 2005				FY 2006			
		1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
In										24	24	24	24				
Out										24	24	24	24				

	FY 2007				FY 2008				FY 2009				To Complete	TOTAL
	1	2	3	4	1	2	3	4	1	2	3	4		
In														
Out														



**Exhibit P-3a**

MODELS OF SYSTEMS AFFECTED: T-45 TRAINING SYSTEM (T45TS) MODIFICATION TITLE: T45TS ENGINE SURGE MITIGATION (OSIP 03-03)

INSTALLATION INFORMATION:

METHOD OF IMPLEMENTATION: TBD

ADMINISTRATIVE LEADTIME: 7 Months PRODUCTION LEADTIME: 12 Months

CONTRACT DATES: FY 2003: \_\_\_\_\_ FY 2004: Apr-04 FY 2005: Apr-05

DELIVERY DATE: FY 2003: \_\_\_\_\_ FY 2004: Apr-05 FY 2005: Apr-06

(\$ in Millions)

Cost:	Prior Years		FY 2003		FY 2004		FY 2005		FY 2006		FY 2007		FY 2008		FY 2009		To Complete		TOTAL		
	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	
FY 2002 & PY ( ) kits																					
FY 2003 ( ) kits																					
FY 2004 ( ) kits							12	1.0													
FY 2005 ( ) kits																					
FY 2006 ( ) kits																					
FY 2007 ( ) kits																					
FY 2008 ( ) kits																					
FY 2009 ( ) kits																					
To Complete ( ) kits																					
<b>TOTAL</b>							<b>12</b>	<b>1.0</b>													

Installation Schedule

	FY 2002 & Prior	FY 2003				FY 2004				FY 2005				FY 2006			
		1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
In												6	6				
Out												6	6				

	FY 2007				FY 2008				FY 2009				To Complete	TOTAL
	1	2	3	4	1	2	3	4	1	2	3	4		
In														
Out														

Exhibit P-3a	Individual Modification																				
MODIFICATION TITLE: T45TS GLOBAL POSITIONING SY T45TS GPS (OSIP10-04)																					
MODELS OF SYSTEMS AFFECTED: ANALOG COCKPIT	TYPE MODIFICATION: PS SAFETY																				
DESCRIPTION/JUSTIFICATION: Congressional requirement that all DoD aircraft be capable of navigating via GPS by the end of year 2005. A retrofit program will incorporate GPS in the existing Analog aircraft. There are currently 73 aircraft that will be retrofitted.																					
DEVELOPMENT STATUS/MAJOR DEVELOPMENT MILESTONES: Kit deliveries will commence in FY06 with installation in FY06.																					
FINANCIAL PLAN: (TOA, \$ in Millions)																					
	Prior Years		FY 2003		FY 2004		FY 2005		FY 2006		FY 2007		FY 2008		FY 2009		To Complete		Total		
	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	
RDT&E																					
PROCUREMENT																					
Installation Kits					12	0.9	12	1.0													
Installation Kits NR																					
Installation Equipment																					
Installation Equipment NR																					
Engineering Change Orders																					
Data						0.1		0.1													
Training Equipment																					
Support Equipment																					
ILS						0.1		0.1													
Other Support																					
Interim Contractor Support																					
Installation Cost																					
<b>Total Procurement</b>					<b>12</b>	<b>1.1</b>	<b>12</b>	<b>1.2</b>													
Notes:																					
1. Totals may not add due to rounding																					
2. Asterisk indicates amount less than \$50K																					

Exhibit P-3a		Individual Modification																		
MODIFICATION TITLE:		T45 AVIONICS OBSOLESCENCE/REQUIRED AVIONICS MODERNIZATION PROGRAM (RAMP) (17-04)																		
MODELS OF SYSTEMS AFFECTED:		T-45 TRAINING SYSTEM (T45TS)												TYPE MODIFICATION: PS SAFETY						
DESCRIPTION/JUSTIFICATION: T45TS is facing critical obsolescence/performance issues. Components of various avionics boxes will not be supportable as a result of Diminishing Manufacturing Source issues that result in part obsolescence or supplier mortality. RAMP will resolve obsolescence issues and add two multi-function displays (MFDs) per cockpit, associated cockpit controls, and a 1553 digital bus, integrating them with the existing head-up display (HUD), the airborne data recorder (ADR), and a separately procured Global Positioning System/Inertial Navigation (GINA).																				
DEVELOPMENT STATUS/MAJOR DEVELOPMENT MILESTONES: FY03 provided funding (OSIP 16-96) for 1 simulator conversion and OSIP 17-04 will provide FY04 funding for DMS/obsolescence risk mitigation efforts.																				
FINANCIAL PLAN: (TOA, \$ in Millions)																				
	Prior Years		FY 2003		FY 2004		FY 2005		FY 2006		FY 2007		FY 2008		FY 2009		To Complete		Total	
	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$
RDT&E																				
PROCUREMENT																				
Installation Kits					2	0.7	12	2.1												
Installation Kits NR						0.9	0.7													
Installation Equipment					2	0.2	12	10.2												
Installation Equipment NR																				
Engineering Change Orders																				
Data						0.4	0.9													
Training Equipment							2	7.3												
Support Equipment						0.5	*													
ILS						*	*													
Other Support																				
Interim Contractor Support																				
Installation Cost																				
<b>Total Procurement</b>					<b>2</b>	<b>2.7</b>	<b>14</b>	<b>21.3</b>												
Notes:																				
1. Totals may not add due to rounding																				
2. Asterisk indicates amount less than \$50K																				

Exhibit P-40, BUDGET ITEM JUSTIFICATION							DATE: February 2004				
APPROPRIATION/BUDGET ACTIVITY Aircraft Procurement, Navy/APN-5 Aircraft Modifications							P-1 ITEM NOMENCLATURE Power Plant Changes				
Program Element for Code B Items:							Other Related Program Elements				
	Prior Years	ID Code	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	To Complete	Total
QTY		A									
COST (In Millions)	290.9	A	15.6	21.4	24.4	20.2	18.1	19.0	18.6	10.5	438.7
<p>This line item funds modifications to all in-service aircraft engines. Power Plant Changes are required throughout the service life of each aircraft to correct flight deficiencies and improve operational readiness while reducing engine operating costs. This program finances the procurement and installation of retrofit kits for all Navy and Marine Corp aircraft engines and related propulsion hardware such as propellers, starters and transmission. The overall goal of the modifications budgeted in FY 2005 is to continue modification efforts previously initiated on the engines for the F-14, AV-8B, H-53, S-3, H-60, E/A6-B, A-6, H-2, AH-1W, T-38, F-5, F/A-18E/F, H-46, H-3, C-2, E-2, A-4, H-53, MH-60, C-130, F/A-18C/D, T-2, P-3, VH60, UH1N,T-45, F16 and V22 aircraft.</p> <p>The following depicts the current funding levels budgeted and programed for Power Plant Changes:</p>											
(TOA, \$ in Millions)											
<u>OSTIP No.</u>	<u>Description</u>	<u>Prior Years</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>	<u>FY 2008</u>	<u>FY 2009</u>	<u>To Complete</u>	<u>Total</u>
N/A	Power Plant Changes	290.9	15.6	21.4	24.4	20.2	18.1	19.0	18.6	10.5	438.7
<b>Total</b>		<b>290.9</b>	<b>15.6</b>	<b>21.4</b>	<b>24.4</b>	<b>20.2</b>	<b>18.1</b>	<b>19.0</b>	<b>18.6</b>	<b>10.5</b>	<b>438.7</b>
<b>Note: Totals may not add due to rounding.</b>											

## Exhibit P-3a

## INDIVIDUAL MODIFICATION

MODIFICATION TITLE: Power Plant Changes (OSIP: N/A)

MODELS OF SYSTEM AFFECTED: All Active In-Service Navy and Marine Corps Aircraft

TYPE MODIFICATION: Approx. 80% Safety, 20% Reliability

## DESCRIPTION/JUSTIFICATION:

This program corrects aircraft flight safety deficiencies, improves operational fleet readiness and reduces engine cost of ownership by incorporating approved power plant changes. Power plant changes are required throughout the aircraft service life as the engine ages and operationally revealed deficiencies are discovered, researched, and solutions engineered. The Component Improvement Program (CIP) which is funded in RDT&E,N develops and demonstrates engineering solutions to these deficiencies and through the Engineering Change Proposal (ECP) process, initiates power plant changes. The power plant change program procures the necessary power plant change retrofit kit, its installation, and technical data. This program provides retrofit kits for all Navy and Marine aircraft engines and propulsion related hardware such as propellers, starters, generators, and transmissions. Reliability Improvements are designed to increase Mean Time Between Failure and Mean Time Between Engine Removal by 30% on average and are expected to generate savings/cost avoidance in excess of \$50M annually.

F110 Engine Program F-14 B/D

ECP T130 - Master Chip Detector Relocation moves the MCD to an area which is easily accessible through the daily inspection doors. The redesigned MCD has an improved capture efficiency, and is less prone to leakage.

ECP T144 - LPT Stage 1 Shroud Life Improvement to provide a shroud configuration that will consistently achieve a 4000 TAC inspection interval. The assembly will eliminate ingestion of flow path air and add a disassembly feature to the shrouds.

ECP T139 - Fuel Boost Pump Durability Improvement introduces a new Fuel Boost Pump with an increased orifice diameter. This change will prevent the oil supply source from being lost due to contamination in the oil system.

EMSP Improvements

F402 Engine A/V-8B:

ECP 3709C2 - IGVC Redesigned Bushings

ECP 3763 FMU Mod - Safety modification package to the Fuel Metering Unit which will supply a high-pressure fuel supply to the hydro-mechanical backup unit.

ECP 3784 Engine Wiring Harness- Encapsulation of main engine harness to prevent foreign material penetration (sand, dust, moisture) into the harness and resultant loss of signal quality

ECP 3782 ARMCO Liner/LPC Rear Lip- Fan case liner moves forward and requires a more robust attachment scheme. The LPC fan case rear lip cracks and can fall into the gas path. The redesign fixes the design deficiency.

ECP 3683 ECS &EMS P3 Pipe- Provides revisions to the environmental control system and engine monitoring system P3 signal pipe and associated clippings to accommodate earlier redesign of the P3 transducer mount.

ECP 3722 Bleed Pipe Extension- Increases sleeve length between stage 3 bleed pipe and heat exchanger to accommodate installation difficulties.

ECP 3729 Revised Attachment JPT- Provides revisions to JPT harness with revised attachment nuts to alleviate clearance problems.

ECP 3733 Curvic Coupling Corrosion - Introduces corrosion protection to the curvic coupling to eliminate corrosion attack and resultant reduction in component life.

ECP 3739 NGV Locating Ring - Introduces an improved outer high pressure stage 1 turbine nozzle guide vane locating ring to alleviate assembly problems.

ECP 3744 #2 BRG Seal Housing - Introduces an elongated bore shape to the #2 bearing to correct a design deficiency.

ECP 3748 #1 BRG Nut Channel - Revised material and plating the number 1 bearing to alleviate design deficiency.

ECP 3771 HP Rotor Nut Revision - Revised high pressure rotor center front nut and cupwasher to improve structural weakness.

ECP 3787 DECU Hybrid Circuits - Revised T1 thermocouple hybrid circuits to the DECU for improved data accuracy.

ECP 3794 FMU Shielded Bearings- Revised fuel metering unit shielded bearings to the stepper motor assembly to alleviate design deficiency.

ECP 3797 FMU Bonded Shells- Revised bonded electrical connector shells to the fuel metering unit to improve durability.

ECP 3798 PLAU Bonded Shells - Revised bonded electrical connector shells to the power lever angle unit to improve durability.

ECP 3800 P3 Transducer New Mount - New vibration isolation mount for the P3 transducer to prevent premature failures of the transducer.

ECP 3806 Hot Nozzle Cracking - Redesign of the hot nozzles to minimize or prevent the current problem of cracking and part attrition

EVICS

ECP TBD Revised Water Injection Pipe Runs

ECP TBD MOD Bottom Heat Shield

ECP TBD FMU HP Pump PRV

ECP TBD LPC Stage 1 Damping Foil

ECP TBD Mod to Accept EVICS

F404 Engine F/A 18

ECP E78 Main Fuel Control Selector Valve

ECP A27 VEN Position Transmitter Improvement

ECP C67 MFC Manifold Redesign

ECP E70 T1 Caution Capacitor Improvement

ECP E91 Improved MFC Ratio Boost Pston

ECP F15 Front Frame Transducer Bracket

ECP TBD MFM Kits

ECP TBD Mod Turbine Kits

J52Engine EA 6/B, A-6, A-4:

ECP 95XA013 Redesigned Pressure Ratio and Compressor Slator Controls reduce the susceptibility that can cause friction between the shank and the reset diaphragm.

ECP CP93XA069 Thermal Barrier Coated (TBC) 1st Stage Turbine Slator Vane Assembly will increase the durability of the vanes. This change is also required for a 1500 hr engine build.

ECP TBD 4 1/2 Bearing Redesign

Exhibit P-3a	INDIVIDUAL MODIFICATION	
MODIFICATION TITLE:	Power Plant Changes (OSIP: N/A)	
MODELS OF SYSTEM AFFECTED:	All Active In-Service Navy and Marine Corps Aircraft	TYPE MODIFICATION: Approx. 80% Safety, 20% Reliability
<u>T58 Engine H-3, H-46</u>		
ECP TBD Stage 3 Nozzle Antirotation		
ECP TBD Overspeed Switch		
ECP TBD High Temp O-rings		
ECP TBD Flow Divider Imp		
ECP 58C-24 Small Features Imp		
ECP TBD Stage 1 Nozzle Imp		
ECP TBD #1 Tabbed/Anti-Rot Bearings		
ECP TBD #2 Engine Seal Puller		
ECP 58K-23 AGB Chip Detector		
<u>TF34 Engine S-3:</u>		
ECP TF34-JAX-001 Reconcile discrepancies contained in ECP 23EG5504, Variable Geometry System Improvements, ECP 23EG5512 Compressor Arm Retention, and ECP 23EG5529 for Improved Compressor Abradable Coating and combine in the correct sequence the improvements into one ECP. The combined approach will streamline incorporation and reduce total maintenance actions including replacement of separate right and left VG linkages with a single improved linkage; installation of VG linkage retaining hardware; and incorporation of an improved stator coating. Incorporation of these modifications will improve readiness.		
<u>T64 Engine H-53:</u>		
ECP 64E-55 Improved Single Ring Carbon Seals at the Nos 2,3, and 4 bearing positions with more durable single-ring seals.		
ECP T64 Improved Main Fuel Control		
ECP TBD Combustion Liner Anti Rotation		
ECP TBD TiN Coating		
ECP TBD PT Over Speed Switch		
ECP TBD T-62T-27 Thermocouple Relay		
ECP TBD Comp Rear Spool Oil Drain Holes		
ECP TBD High Temperature Wolf Gasket		
ECP TBD Lube Filter Bypass Valve Seat		
ECP T-62T-27 Elbow		
ECP TBD Reliability Centered Maintenance		
ECP TBD Anti-Leak Check Valve		
<u>T700 Engine H-2, H-60, AH-1</u>		
ECP 136R2 Nr 2 Bearing Housing and Damper Improvement provides an Output Drive Assembly (ODA) with improved housing, damper and spline lubrication for the No two bearing housing.		
ECP 122 Stage 3 Rotor Ring adds a stage three containment ring to the power turbine module on all T700-GE-401C and T700-GE-701C engines to compensate for the increase in temperature when these engines operate in aircraft equipped with infrared suppressors.		
ECP 123 Stage 1 Blade Tip Corrosion Resistance will incorporate an improved tip material to preclude deterioration.		
ECP 125 HydroMechanical Unit (HMU) Improvements prevent internal contamination in the Woodward Governor HMU		
ECP 126 HMU O Ring - Replaces the Noton O-Ring in the Hamilton Standard HMU with a Fluorocarbon based O-Ring to prevent fuel leakages.		
ECP T700 Turbine Blade Redesign		
ECP PPC 16 Rev A Blade Damper		
ECP TBD UNS-401C DECU Update		
<u>T400 Engine AH1W, UH1N</u>		
ECP TBD Bearing Pressure Oil Tube Assy		
ECP TBD Improved Air Inlet Screen		
ECP TBD Non Asbestos T5 Jumper Leads		
ECP TBD Sprag Clutch Assy		
ECP TBD Improved P3 Filter Bowl Housing		
ECP TBD Improved No. 5 & 8 Cup Washers		
ECP TBD Improved No. 10 Bearing		

MODIFICATION TITLE: Power Plant Changes (OSIP: N/A)MODELS OF SYSTEM AFFECTED: All Active In-Service Navy and Marine Corps AircraftTYPE MODIFICATION: Approx. 80% Safety, 20% ReliabilityT56 Engine P-3, C-2, E-2, C-130

ECP 2132 Dummy Plug Redesign (SIII)  
 ECP 2132 Dummy Plug Redesign (IV)  
 ECP T-56-A-427-002 S/V Turbine Blade Rework  
 ECP T56-A-427-003 Polished Swirl Plate  
 ECP 56-A-427-001 Fuel Nozzle Purge  
 ECP TBD Governors  
 ECP TBD SIV Dummy Plug Redesign  
 ECP TBD Dome Shell Seal kit  
 ECP 2122B EMS/EAU Software  
 ECP 2131 DETC Omnibus Change  
 ECP 2121 Diaphragm for RGB  
 ECP 2102 Rear Engine Mount  
 ECP 2115 TD Amp Harness  
 ECP/AEM 104491 14 Stage Wheel  
 ECP 2013R1 Custom 450 Comp Vane  
 ECP 2127-3 Micron Scavenge Oil Filter  
 ECP 2124 MFC Omnibus Change

F414 Engine F/A18-E/F

ECP TBD Combustor Flameout  
 ECP TBD HPC Durability and Performance  
 ECP TBD MFM Kits  
 ECP TBD MFC Bracket Rework  
 ECP TBD Transfer Lever Arm  
 ECP TBD HPT Nozzle Retaining Ring  
 ECP TBD A-sump Tube Bracket  
 ECP A-02 A/B Case Aft Ring Hardcoat  
 ECP C-06 Rework Balnace Piston Vent  
 ECP TBD VEN Start Line Cracking

F405 Engine T-45

ECP TS-234 Rising Idle Modification  
 ECP TBD Compressor Improved Coating  
 ECP TBD LP Stator Coating  
 ECP TBD Surge Modification Kits  
 ECP TBD Omega Seals  
 ECP TBD Electrical Harness  
 ECP TBD Module 02 Coating  
 ECP TBD HVC Vane Coating  
 ECP TBD Modules 3, 10, 11 Coatings  
 ECP TBD COSSI Drum

J85 Engine F-5, T-2, T-38

ECP 85S-99 Carbide VEN Leafs  
 ECP 85N-55 Improved Ignition  
 ECP TBD Turbine Improvements  
 ECP TBD Fuel Control Improvement  
 ECP TBD Improved Ignitor System Components  
 ECP 85E-106 High Temperature Clamps

F100 Engine F-16

ECP TBD Compressor Safety Changes  
 ECP TBD Turbine Safety Changes

T405 Engine V22

ECP TBD Gear Box Modification  
 ECP TBD Turbine System Modification

## DEVELOPMENT STATUS/MAJOR DEVELOPMENT MILESTONES:

All engineering efforts will be accomplished prior to procurement of kits.

Exhibit P-3a

FINANCIAL PLAN (TOA, \$ in Millions):

CLASSIFICATION:

	Prior Years		FY 2003		FY 2004		FY 2005		FY 2006		FY 2007		FY 2008		FY 2009		To Complete		TOTAL		
	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	
<b>RDT&amp;E</b>		241.230		28.385		48.473		52.436													
<b>PROCUREMENT</b>																					
Installation Kits																					
<b>F110 Engine (F-14 B/D)</b>																					
ECP T086 - Vented IDG Ejector Valve	337	0.474																			
ECP T130 - Master Chip Detector Relocation	150	0.952	60	0.393	60	0.404															
ECP T144 - LPT Slg 1 Shroud Improvement	180	0.736	60	0.256	30	0.131															
ECP T139 - Fuel Boost Pump Mod	180	0.373	60	0.132	30	0.070															
ECP T151 - Fuel Nozzle Moeller Fittings	210	0.483	60	0.147																	
EMSPP IMPROVEMENTS	150	0.382			79	0.210															
PYROMETER IMPROVEMENTS	150	0.381	60	0.163																	
ECP-T158- FRONT FRAME DMPER MIGRA R	240	0.346	30	0.048																	
T 2.5 SENSOR BRAZEJOINT IMPROVEMENT	420	0.084	60	0.012																	
CMC FLAMEHOLDER	240	0.986	30	0.126																	
T155 MEC IMPROVEMENT	123	0.123	30	0.030																	
<b>F402 Engine (AV-8B)</b>																					
EVICS					2	0.245	2	0.240													
ECP TBD Revised Water Injection Pipe Runs					3	0.024															
ECP TBD MOD Mod Bottom Heat Shield					4	0.024															
ECP TBD FMU HP Pump PRV					7	0.130	7	0.130													
ECP TBD LPC Stage 1 Damping Foil					10	0.260	10	0.260													
ECP TBD Mod to Accept EVICS					8	1.049	13	1.756													
ECP 3606 - INCO 718 BOLT	51	0.017	40	0.015																	
ECP 3709C2 - IGVC Redesigned Bushings	133	0.377	54	0.014	25	0.078															
ECP 3763 FMU Mod	58	0.669	17	0.273	13	0.300															
ECP 3784 Encapsulated Wiring harness	277	1.586	18	0.155	18	0.205	18	0.205													
ECP 3782 ARMCO Liner/LPC Rear Lip	64	0.007	50	0.015	50	0.005															
ECP 3683 FCS & EMS P3 Pipe	39	0.025	50	0.017	50	0.040															
ECP 3722 Bleed Pipe Extension	39	0.016	50	0.025	50	0.025															
ECP 3729 Revised Attachment JPT	39	0.033	50	0.050	50	0.050															
ECP 3733 Curvic Coupling Corrosion	41	0.136	50	0.150	25	0.100															
ECP 3739 NGV Locating Ring	43	0.142	50	0.155	25	0.100															
ECP 3744 #2 BRG Seal Housing	47	0.042	50	0.050	50	0.050															
ECP 3748 #1 BRG Nut Changes	47	0.042	50	0.050	50	0.050															
ECP 3771 HP Rotor Nut Revision	39	0.016	50	0.020	50	0.025															
ECP 3787 DECU Hybrid Circuits	39	0.162	50	0.225	25	0.125	25	0.125													
ECP 3794 FMU Shielded Bearings	39	0.097	50	0.134	50	0.150															
ECP 3797 FMU Bonded Shells	39	0.033	50	0.075	50	0.050															
ECP 3798 PLAU Bonded Shells	75	0.173	38	0.045	38	0.050															
ECP 3800 Transducer	39	0.162	50	0.230	50	0.250															
ECP 3806 Hot Nozzle Cracking	42	0.180	72	0.511	25	0.450	25	0.456													
ECP TBD SRD Comb/fuel nozzle																					
ECP TBD SRD Fuel Control kits																					

Exhibit P-3a

FINANCIAL PLAN (TOA, \$ in Millions):

CLASSIFICATION:

	Prior Years		FY 2003		FY 2004		FY 2005		FY 2006		FY 2007		FY 2008		FY 2009		To Complete		TOTAL	
	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$
<b>F404 Engine (F/A-18 C/D)</b>																				
ECP E78 - Main Fuel Control Selector Valve	2,465	0.885			142	0.093														
ECP A27 - VEN Position Transmitter Improvement	1,500	1.147			32	0.025	32	0.025												
ECP C67 - MFC Manifold Redesign	1,164	1.687					36	0.056	36	0.056										
ECP E70 - T1 Caution Capacitor Improvement	1,655	2.548			11	0.200	32	0.353												
ECP E91 - Improved MFC Ratio Boost Pstn	700	1.054			69	0.080	69	0.080												
ECP F15 - Front Frame Transducer Bracket	1,100	0.551			25	0.011	25	0.011												
ECP TBD MFM kits					11	0.175	11	0.175												
ECP TBD Mod Turbine kits							7	0.425												
ECP TBD Mech. System Mod kits																				
<b>J52 Engine (E/A-6B, A-6, A-4)</b>																				
ECP 95XA013 - Redesigned Pressure Ratio & Compressor Stator Controls	152	0.350	38	0.106	38	0.110	38	0.124												
ECP CP93XA069 Thermal Barrier Coated 1st Stage Turbine Stator Vanes	37	1.189	37	1.393	17	0.750	35	1.550												
ECP 95XA275C1 J52 Engine Retrofit	14	1.507																		
ECP TBD 4 1/2 Bearing Redesign					270	0.300	90	1.000												
ECP TBD Main FC Mod kits																				
ECP TBD Turbine Mod kits																				
<b>T58 Engine (H-3, H-46)</b>																				
ECP TBD Stage 3 Nozzle Antirotation					16	0.167														
ECP TBD Overspeed Switch					100	0.150	121	0.182												
ECP TBD High Temp O-rings					300	0.127														
ECP TBD Flow Divider Imp					16	0.075														
ECP 58C-24 Small Features Imp					16	0.018														
ECP TBD Stage 1 Nozzle Imp					16	0.019														
ECP TBD #1 Tabbed/Anti-Rot Bearings					108	0.216	108	0.216												
ECP TBD #2 Engine Seal Puller					1	0.030														
ECP TBD Mech Systems Mod kits																				
ECP 58K-23 AGB Chip Detector							25	0.376												
<b>TF34 Engine (S-3)</b>																				
ECP TF34 - JAX 001 - ENGINE COMPRESSOR STATOR CASE	258	0.263	64	0.136	24	0.051														
<b>T64 Engine (H-53)</b>																				
ECP 64E-55 - Impr. Single Ring Carbon Seals	480	0.951	60	0.141	44	0.106														
ECP T64 Improved Main Fuel Control					93	0.280														
ECP TBD Combustion Liner Anti Rotation					30	0.195														
ECP TBD TIN Coating					24	0.024														
ECP TBD PT Over Speed Switch					50	0.075														
ECP TBD T-62T-27 Thermocouple Relay					35	0.050														
ECP TBD Comp Rear Spool Oil Drain Holes					35	0.018														
ECP TBD High Temperature Wolf Gasket					100	0.024														
ECP TBD Lube Filter Bypass Valve Seat					100	0.010														
ECP T-62T-27 Elbow					100	0.050														

Exhibit P-3a

FINANCIAL PLAN (TOA, \$ in Millions):

CLASSIFICATION:

	Prior Years		FY 2003		FY 2004		FY 2005		FY 2006		FY 2007		FY 2008		FY 2009		To Complete		TOTAL		
	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	
ECP TBD Reliability Centered Maintenance					14	0.125	14	0.125													
ECP TBD Anti-Leak Check Valve					100	0.024															
<b>T700 Engine (H-2, H-60, AH-1)</b>																					
ECP 700102C1 Stage 1 & 2 Turbine Dampers	26	0.973																			
ECP 136R2 - Nr 2 Bearing Housing & Damper Improvement	80	0.647	138	1.152	88	0.700	200	1.740													
ECP 122 - Stage 3 Rotor Ring	673	1.388	209	0.460	209	0.928	207	0.476													
ECP 123 - Stage 1 Blade Tip Corrosion Resistance	226	3.432	133	1.930	37	0.928															
ECP 124 - Exhaust Frame Drain Hole	600	0.600	200	0.220																	
ECP 125 - HydroMechanical Unit (HMU) Improvements	199	0.820	104	0.447	64	0.297	108	0.497													
ECP 126 - HMU O-Ring	238	0.967	153	0.627	88	0.400	176	0.792													
ECP T700 Turbine Blade Redesign					28	0.200	443	2.650													
ECP T700 TBD VARIOUS																					
ECP PPC 16 Rev A Blade Damper					150	0.870															
ECP TBD Compressor System Mod kits																					
ECP TBD Combustor Mod kits																					
ECP TBD UNS -401C DECU Update					50	0.078															
<b>T400 Engine (AH1W, UH1N)</b>																					
ECP TBD Bearing Pressure Oil Tube Assy					10	0.007															
ECP TBD Improved Air Inlet Screen					15	0.006															
ECP TBD Non Asbestos T5 Jumper Leads					80	0.008															
ECP TBD Sprag Clutch Assy					250	0.010															
ECP TBD Improved P3 Filter Bowl Housing					30	0.180	30	0.184													
ECP TBD Improved No. 5 & 8 Cup Washers					60	0.010															
ECP TBD Improved No. 10 Bearing					30	0.010															
<b>T56 Engine (P-3, C-2, E-2, C-130)</b>																					
ECP 2112R1 - 15 Micron Oil Filter	4,004	3.329																			
ECP 2132 Dummy Plug Redesign (SIII)					25	0.168															
ECP 2132 Dummy Plug Redesign (IV)					25	0.181															
ECP T-56-A-427-002 S/V Turbine Blade Rework					10	0.055															
ECP T56-A-427-003 Polished Swirl Plate					30	0.490	10	0.150													
ECP 56-A-427-001 Fuel Nozzle Purge					26	0.060															
ECP TBD Governors					60	0.400															
ECP TBD SIV Dummy Plug Redesign					19	0.130															
ECP TBD Dome Shell Seal kit					40	0.250	40	0.250													
ECP 2122B EMS/EAU Software					60	0.090															
ECP 2131 DETC Omnibus Change					40	0.150															
ECP 2121 Diaphragm for RGB					70	0.035															
ECP 2102 Rear Engine Mount					50	0.015															
ECP 2115 TD Amp Harness					100	0.056															
ECP/AEM 104491 14 Stage Wheel					3	0.018															
ECP 2013R1 Custom 450 Comp Vane					4	0.036															

Exhibit P-3a

FINANCIAL PLAN (TOA, \$ in Millions):

CLASSIFICATION:

	Prior Years		FY 2003		FY 2004		FY 2005		FY 2006		FY 2007		FY 2008		FY 2009		To Complete		TOTAL		
	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	
ECP 2127-3 Micron Scavenge Oil Filter					60	0.019															
ECP TBD Assy Mod kits																					
ECP TBD Wiring Mod kits																					
ECP 2124 MFC Omnibus Change					40	0.344	40	0.300													
<b>F414 Engine (F/A-18E/F)</b>																					
ECP TBD Combustor Flameout			150	0.015	150	0.015	100	0.500													
ECP TBD HPC Durability and Performance			85	0.045	60	0.032	100	0.667													
ECP TBD MFM Kits					50	0.350	100	0.990													
ECP TBD MFC Bracket Rework					50	0.150	75	0.225													
ECP TBD Transfer Lever Arm					75	0.371	50	0.250													
ECP TBD HPT Nozzle Retaining Ring					150	0.156	200	0.315													
ECP TBD A-ump Tube Bracket					100	0.035	62	0.137													
ECP A-02 A/B Case Alt Ring Hardcoat					10	0.034	75	0.756													
ECP C-06 Rework Balnace Piston Vent					15	0.033															
ECP TBD VEN Start Line Cracking			55	0.011	55	0.011	110	0.035													
ECP TBD Control System Mod kits							75	0.647													
ECP TBD IGV Mod kits							62	0.468													
ECP TBD Gas Path Mod kits							80	0.758													
ECP TBD A/B Mod kits																					
ECP TBD Mech System/wiring mod kits																					
<b>F405 Engine (T-45)</b>																					
ECP TS-234 Rising Idle Modification	166	0.082			166	0.081															
ECP TBD Compressor Improved Coating			55	0.165	33	0.100	28	0.080													
ECP TBD LP Stator Coating			45	0.250	35	0.194															
ECP TBD Fuel Control Unit Life Enhancement			60	0.120																	
ECP TBD Surge Modification Kits					83	0.150	83	0.150													
ECP TBD Omega Seals					83	0.075	83	0.075													
ECP TBD Electrical Harness					83	0.075	83	0.075													
ECP TBD Module 02 Coating					83	0.750	83	0.075													
ECP TBD HVC Vane Coating					83	0.050	83	0.050													
ECP TBD Modules 3, 10, 11 Coatings					83	0.050	83	0.050													
ECP TBD HPT Blades																					
ECP TBD LPT Blades																					
ECP TBD HPNGV																					
ECP TBD LPNGV																					
ECP TBD COSSI Drum					50	0.090															
<b>J85 Engine (F-5, T-2, T-38)</b>																					
ECP 85S-99 Carbide VEN Leafs*			30	0.348	8	0.100	42	0.434													
ECP 85N-55 Improved Ignition*			60	0.160	36	0.088	36	0.088													
ECP TBD Turbine Improvements					36	0.200	36	0.100													
ECP TBD Fuel Control Improvement					36	0.090	36	0.090													
ECP TBD Improved Ignitor System Components					36	0.061															

Exhibit P-3a

FINANCIAL PLAN (TOA, \$ in Millions):

CLASSIFICATION:

	Prior Years		FY 2003		FY 2004		FY 2005		FY 2006		FY 2007		FY 2008		FY 2009		To Complete		TOTAL		
	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	
ECP 85E-106 High Temperature Clamps*			107	0.008	36	0.055															
<b>F100 Engine (F-16)</b>																					
ECP TBD Compressor Safety Changes																					
ECP TBD Turbine Safety Changes																					
<b>T405 Engine (V22)</b>																					
ECP TBD Gear Box Modification																					
ECP TBD Turbine System Modification																					
<b>COMPLETED ECPS FROM PRIOR YRS</b>	32,169	193.063																			

Exhibit P-3a

FINANCIAL PLAN (TOA, \$ in Millions): CLASSIFICATION:

	Prior Years		FY 2003		FY 2004		FY 2005		FY 2006		FY 2007		FY 2008		FY 2009		To Complete		TOTAL		
	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	
Installation Kits N/R																					
Installation Equipment																					
Installation Equipment N/R																					
Engineering Change Orders																					
Data		0.221		0.050		0.050		0.050													
Non Recurring Equipment		0.164																			
Support Equipment		0.106						0													
ILS		3.541		0.495		0.382		0.505													
Other Support		30.602		2.687		0.898		1.195													
Interim Contractor Support																					
<b>Installation Cost</b>		29.614		1.166		1.265		0.435													
<b>TOTAL PROCUREMENT</b>	<b>51,476</b>	<b>290,916</b>	<b>3,122</b>	<b>15,648</b>	<b>6,436</b>	<b>21,404</b>	<b>3,762</b>	<b>24,409</b>													

Exhibit P-3a

MODELS OF SYSTEMS AFFECTED: All Active In-Service Navy and Marine Corps Aircraft MODIFICATION TITLE: Power Plant Changes (OSIP: N/A)

INSTALLATION INFORMATION: The tables below list the quantities, installation schedules, and costs for those ECPs for which there is an installation cost. Of those ECPs with installation costs, three are not shown as they are labor-only modifications and require no kit. The reason they are not shown in these tables is that the procurement quantity and installation quantities would not be equal.

METHOD OF IMPLEMENTATION: Current with engine/module repair (where installation cost is zero), or by forced retrofit (shown below).

ADMINISTRATIVE LEADTIME: Average 6 Months PRODUCTION LEADTIME: Average of 12 months

CONTRACT DATES: FY 2003: Varies FY 2004: Varies FY 2005: Varies

DELIVERY DATE: FY 2003: Varies FY 2004: Varies FY 2005: Varies

(\$ in Millions)

Cost:	Prior Year		FY 2003		FY 2004		FY 2005		FY 2006		FY 2007		FY 2008		FY 2009		To Complete	TOTAL
	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$		
FY 2002 Kits and Prior ( )	5,727	8,219	59	64														
FY 2003 ( ) kits			469	471	59	64												
FY 2004( ) kits					516	58	523	504										
FY 2005( ) kits							400	410										
FY 2006( ) kits																		
FY 2007 ( ) kits																		
FY 2008 ( ) kits																		
FY 2009 ( ) kits																		
To Complete ( ) kits																		
<b>TOTAL</b>	5,727	8,219	528	535	575	122	923	914										

Installation Schedule

	FY 2002 & Prior	FY 2003				FY 2004				FY 2005				FY 2006				FY 2007				
		1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	
In	5727	130	133	133	132	142	145	144	144	230	231	231	231									
Out	5727	130	133	133	132	142	145	144	144	231	231	231	231									

	FY 2008				FY 2009				To Complete	TOTAL
	1	2	3	4	1	2	3	4		
In										
Out										

Exhibit P-40, BUDGET ITEM JUSTIFICATION							DATE: February 2004																																								
APPROPRIATION/BUDGET ACTIVITY Aircraft Procurement, Navy/APN-5 Aircraft Modifications							P-1 ITEM NOMENCLATURE JPATS Series Modification																																								
Program Element for Code B Items:							Other Related Program Elements																																								
	Prior Years	ID Code	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	To Complete	Total																																				
QTY																																															
COST (In Millions)		A		0.5	0.6	0.7	1.6	1.3	1.5	24.7	31.0																																				
<p>This line item funds modifications to T-6A aircraft. The T-6A Texan II is a tandem-seat, turboprop aircraft derivative of the Pilatus PC-9 aircraft powered by a single Pratt &amp; Whitney PT6A-68 engine. It serves as the aircraft component of the JPATS integrated primary pilot training system which replaces the T-34C primary training aircraft. The overall goal of the modifications budgeted in FY 2005 is to correct discrepancies and deficiencies discovered after delivery of the aircraft, maintain joint configuration with Air Force aircraft and the joint program. It also incorporates major upgrades to the aircraft cockpit, navigation system, and aircrew life support system (ALSS).</p> <p>The specific modifications budgeted and programmed are:</p> <p style="text-align: center;">(TOA, \$ in Millions)</p> <table border="1"> <thead> <tr> <th>OSIP No.</th> <th>Description</th> <th>Prior Years</th> <th>FY 2003</th> <th>FY 2004</th> <th>FY 2005</th> <th>FY 2006</th> <th>FY 2007</th> <th>FY 2008</th> <th>FY 2009</th> <th>To Complete</th> <th>Total</th> </tr> </thead> <tbody> <tr> <td>11-04</td> <td>JPATS Correction of Deficiencies</td> <td></td> <td></td> <td>0.5</td> <td>0.6</td> <td>0.7</td> <td>1.6</td> <td>1.3</td> <td>1.5</td> <td>24.7</td> <td>31.0</td> </tr> <tr> <td></td> <td><b>Total</b></td> <td></td> <td></td> <td><b>0.5</b></td> <td><b>0.6</b></td> <td><b>0.7</b></td> <td><b>1.6</b></td> <td><b>1.3</b></td> <td><b>1.5</b></td> <td><b>24.7</b></td> <td><b>31.0</b></td> </tr> </tbody> </table> <p><b>Note: Totals may not add due to rounding.</b></p>												OSIP No.	Description	Prior Years	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	To Complete	Total	11-04	JPATS Correction of Deficiencies			0.5	0.6	0.7	1.6	1.3	1.5	24.7	31.0		<b>Total</b>			<b>0.5</b>	<b>0.6</b>	<b>0.7</b>	<b>1.6</b>	<b>1.3</b>	<b>1.5</b>	<b>24.7</b>	<b>31.0</b>
OSIP No.	Description	Prior Years	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	To Complete	Total																																				
11-04	JPATS Correction of Deficiencies			0.5	0.6	0.7	1.6	1.3	1.5	24.7	31.0																																				
	<b>Total</b>			<b>0.5</b>	<b>0.6</b>	<b>0.7</b>	<b>1.6</b>	<b>1.3</b>	<b>1.5</b>	<b>24.7</b>	<b>31.0</b>																																				

Exhibit P-3a		Individual Modification
MODIFICATION TITLE:	<u>JPATS Correction of Defeciencies (OSIP 11-04)</u>	
MODELS OF SYSTEMS AFFECTED:	<u>T-6A</u>	TYPE MODIFICATION: <u>PS SAFETY</u>
DESCRIPTION/JUSTIFICATION:		
<p>* Corrections to discrepancies found during testing and evaluation can sometimes be incorporated into production aircraft, effective with the physical configuration audit which establishes the product baseline of the aircraft. However when this cannot be done due to time constraints, retrofit of the changes into already delivered aircraft requires funding through the Aircraft Modification Program. Additionally, deficiencies discovered during Fleet operations must be corrected. The unacceptable alternative to retrofitting would be multiple configurations in the Fleet, which creates maintenance and supply problems, and in many cases the mission capability of the aircraft would be adversely affected as well as reduced service life. Corrections to the following items/conditions are required:</p>		
VHF Radio (Audio Volume)	Provide for the correction of volume and reception level discrepancies. Current volume inequities between the UHF/VHF radios make the radio unintelligible and a safety concern for aircrew.	
OBOGS Upgrades (ECP 049)	Safety modifications to improve the normal and emergency aircrew oxygen supply systems. Mods address increased supply , delivery control box and software logic corrections.	
Oil Pressure Warning	Safety modifications to correct oil pressure cockpit warning indications and associated systems to improving aircrew situational awareness and overall systems operation.	
Anti-suffocation Valve	Safety modification addressing excessive force required to breath of current valave. Correction will solve unconsciousness aircrew air supply requirements.	
Ejection Mode Selector	Modifies Interseat Sequencing System (Ejection system) to add two additional modes allowing command ejection authority designated to each seat.	
Cockpit Improvements	Safety and Human Factors modification to the cockpit to improve aircrew efficiencies and to eliminate excessive pilot workload and other dangerous situations. Modifications include rearviewmirrors, improved cockpit storage, improved night lighting, reducing excessive ambient noise, improved trim relays, open avionic wire bundles, communication audio volume solutions, nose wheel position/positioning systems and flight instrument display issues.	
NACWS Replacement	Safety modification to replace the obsolete and unsupportable Naval Aircraft Collision Warning System (NACWS) due to FAA changes in the National Airspace System.	
Canopy System Improvement	Modifications to the current canopy system to improve anti G subsystem and canopy seal valve failures.	
Avionics Obsolescence	Provides for the identification and replacement of identified obsolescent cockpit instruments and displays.	
Braking Improvement (Anti-skid)	Safety modification to improve the short field abort and stopping distances of the aircraft through the introduction of improved braking system.	
Nose Wheel Centering	Safety modification to provide positive nose wheel centering inflight. Category 1 Deficiency,	
MLG Door Tie Rods	Retrofit of improved durability MLG door tie rod.	
MLG Sidebrace Redesign	Re-work of existing MLG drag link. Improve grease fitting access to maintainability improvement.	
Trim System Redesign	Safety modification to reduce trim actuator force limit, decrease activation speed. Results in shorter landing distances.	
Landing Gear Doors & Bellcrank	Structural fixes to gear doors & bellcrank to eliminate cracking.	
UWARS Addition to Ejection Seat	Safety modification to add UWARS to Ejection Seat. Current system lacks UWARS, restricting overwater fliht operations.	
Acceptance of Ground Power	Operational modification to allow acceptance of electric power commercial ground power carts.	
Life Raft Addition to Ejection Seat	Safety modification to install Life raft to ejection seat. Current system lacks raft, restricting overwater flight operations.	
Increase Gross Weight	Structural mods to increase weight capacity. Need driven by weight additions for Anti-Skid, Life Raft, Oil Pressure warning system.	
OBOGS Low Pressure Switch	Safety modification to improve OBOGS low pressure switch. In-flight failures have caused numerous aborts.	
Condensor Blower Motor-Longer Life	Replace air conditioning blower with longer life, brushless motor, reducing life cycle costs	
Supplemental Oxygen System	Safety modification to increase volume of emergency oxygen. Class A safety board recommendation.	
GPS Receiver Upgrade-LAAS	Operational update to GPS system-allows aircraft to utilize LAAS approaches.	
OBOGS Blinker Visibility at Night	Safety modification to increase blinker visibility @ night. Deficiency noted during OPEVAL.	
Engine PMU Upgrade	Operational modification to fix engine power management unit (PMU) software. Mod required to eliminate hot-start abort conditions.	
DEVELOPMENT STATUS/MAJOR DEVELOPMENT MILESTONES:		
Feb 93 received MS 0 and MS I approval, Aug 95 received MSII and LRIP approval, Dec 01 received MS III approval, and Navy IOC occurred 4th Qtr FY03.		

Exhibit P-3a Individual Modification

MODIFICATION TITLE: JPATS Correction of Defeciencies (OSIP 11-04)

MODELS OF SYSTEMS AFFECTED: T-6A TYPE MODIFICATION: PS SAFETY

FINANCIAL PLAN: (TOA, \$ in Millions)

	Prior Years		FY 2003		FY 2004		FY 2005		FY 2006		FY 2007		FY 2008		FY 2009		To Complete		Total		
	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	
RDT&E																					
PROCUREMENT																					
Installation Kits																					
VHF Radio (Audio Volume)					20	*	9	*													
OBOGS Upgrades (ECP-049)					18	0.1	9	0.1													
Oil Pressure Warning					13	0.1	8	0.1													
Anti-suffocation Valve							4	*													
Ejection Mode Selector							4	*													
Cockpit Improvements							3	0.1													
NACWS Replacement																					
Canopy System Improvement																					
Avionics Obsolescence																					
Braking Improvement (Anti-skid)																					
Nose Wheel Centering							2	*													
MLG Door Tie Rods							2	*													
MLG Sidebrace Redesign							2	*													
Trim System Redesign							3	*													
Landing Gear Doors & Bellcrank							2	*													
UWARS Add-on to Ejection Seat							2	*													
Acceptance of Ground Power							2	*													
Life Raft Add-on to Ejection Seat							2	*													
Increase Gross Weight																					
OBOGS Low Pressure Switch																					
Condensor Blower Motor - Longer Life							1	*													
Supplemental Oxygen System																					
GPS Receiver Upgrade - LAAS																					
OBOGS Blinker Visibility at Night							3	*													
Engine PMU Upgrade																					
Installation Kits NR																					

FINANCIAL PLAN: (TOA, \$ in Millions)

	Prior Years		FY 2003		FY 2004		FY 2005		FY 2006		FY 2007		FY 2008		FY 2009		To Complete		Total		
	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	
Installation Equipment																					
Oil Pressure Warning					13	*	8	*													
Anti Suffocation Valve							4	*													
Ejection Mode Selector							4	*													
Cockpit Improvements							3	*													
NACWS Replacement																					
Canopy System Improvement																					
Avionics Obsolescence																					
Braking Improvement (Anti-skid)																					
Nose Wheel Centering							2	0.1													
MLG Sidebrace redesign							2	*													
Landing Gear Doors & Bellcrank							2	*													
UWARS Add-on to Ejection Seat							2	*													
Life Raft Add-on to Ejection Seat							2	*													
Increase Gross Weight																					
OBOGS Low Pressure Switch																					
Condensor Blower Motor - Longer Life							1	*													
Supplemental Oxygen System																					
GPS Receiver Upgrade - LAAS																					
OBOGS Blinker Visibility at Night							3	*													
Engine PMU Upgrade																					
Installation Equipment NR																					
Engineering Change Orders																					
Data							*	*													
Training Equipment							*	*													
Support Equipment							*	*													
ILS							*	*													
Other Support							*	*													
Interim Contractor Support																					
Installation Cost					51	0.2	58	0.2													
<b>Total Procurement</b>					<b>51</b>	<b>0.5</b>	<b>58</b>	<b>0.6</b>													

Notes:

1. Totals may not add due to rounding
2. Asterisk indicates amount less than \$50K

Exhibit P-3a

Individual Modification

MODIFICATION TITLE: JPATS Correction of Deficiencies (OSIP 11-04)  
 INSTALLATION INFORMATION: VHF Radio (Audio Volume)/OBOGS Upgrades (ECP-049)/Oil Pressure Warning/Anti-suffocation Valve/Ejection Mode Selector/Cockpit Improvements/NACWS Replacement/Canopy System Improvement/Avionics Obsolescence/Braking Improvement (Antiskid)/Nose Wheel Centering/MLG Door Tie Rods/MLG Sidebrace Redesign/Trim System Redesign/Landing Gear Doors & Bellcrank/UWARS Addition to Ejection Seat/Acceptance of Ground Power/Life Raft Addition to Ejection Seat/Increase Gross Weight/OBOGS Low Pressure Switch/GPS Repeater for Simulator/Baro Altimeter Repeater for Simulator/Condensor Blower Motor-Longer Life/Supplemental Oxygen System/GPS Receiver Upgrade-LAAS/OBOGS Blinker Visibility at Night/Engine PMU Upgrade/Simulator Mods to Reflect A/C Systems

MODELS OF SYSTEMS AFFECTED: T-6A TYPE MODIFICATION: PS SAFETY

ADMINISTRATIVE LEADTIME: \* Months PRODUCTION LEADTIME: 6 Months

CONTRACT DATES: FY 2003: \_\_\_\_\_ FY 2004: Various FY 2005: Various

DELIVERY DATE: FY 2003: \_\_\_\_\_ FY 2004: Various FY 2005: Various

(\$ in Millions)

Cost:	Prior Years		FY 2003		FY 2004		FY 2005		FY 2006		FY 2007		FY 2008		FY 2009		To Complete		TOTAL		
	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	
FY 2002 & PY ( ) kits																					
FY 2003 ( ) kits																					
FY 2004 ( ) kits					51	0.2															
FY 2005 ( ) kits							58	0.2													
FY 2006 ( ) kits																					
FY 2007 ( ) kits																					
FY 2008 ( ) kits																					
FY 2009 ( ) kits																					
To Complete ( ) kits																					
TOTAL					51	0.2	58	0.2													

Notes:

Installation Schedule

FY 2002 & Prior	FY 2003				FY 2004				FY 2005				FY 2006			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
In					17	17	17		19	19	20					
Out					17	17	17		19	19	20					

	FY 2007				FY 2008				FY 2009				To Complete	TOTAL
	1	2	3	4	1	2	3	4	1	2	3	4		
In														
Out														

CLASSIFICATION: **UNCLASSIFIED**

**Exhibit P-40, BUDGET ITEM JUSTIFICATION**

DATE: **February 2004**

APPROPRIATION/BUDGET ACTIVITY: **Aircraft Procurement, Navy/APN-5 Aircraft Modifications** P-1 ITEM NOMENCLATURE: **Aviation Life Support Mods**

Program Element for Code B Items: **057500** Other Related Program Elements

	Prior Years	ID Code		FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	To Complete	Total
QTY		A										
COST (In Millions)		A		0.5	6.3	7.4	9.9	25.4	24.8	16.0	21.7	112.1

The specific modifications budgeted and planned are:  
 (1) The conversion of aircraft from Liquid Oxygen (LOX) to On-board Oxygen Generation Systems (OBOGS) for aircrew breathing purposes. This conversion is referred to as LOX-to-OBOGS (LTO) and is part of a cost reduction initiative to eliminate the need for manufacturing and storing of liquid oxygen. The Navy plans to eliminate LOX from all aircraft carriers by 2010 which will require the conversion of carrier based aircraft to OBOGS.  
 (2) Detector installation on rotary and cargo aircraft to identify the presence of chemical warfare (CW) vapors.  
 (3) The addition of the Mobile Aircrew Restraint System (MARS) to helicopters. MARS will replace existing fixed length tether with a locking retraction system that allows safe movement of the aircrew within the cargo area while affording protection during a mishap or combat. MARS will be mounted to the aircraft overhead.

(TOA, \$ in Millions)

OSIP No.	Description	Prior Years	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	To Complete	Total
17-03	OBOGS		0.5	6.3	4.9	8.4	9.7	9.8	8.0	9.9	57.5
02-05	CW DETECTORS				2.5	1.6	1.8	3.3	5.3	5.1	19.6
XX-07	MARS						13.9	11.8	2.8	6.7	35.1
<b>Total</b>			<b>0.5</b>	<b>6.3</b>	<b>7.4</b>	<b>9.9</b>	<b>25.4</b>	<b>24.8</b>	<b>16.0</b>	<b>21.7</b>	<b>112.1</b>

Note: Totals may not add due to rounding.

Exhibit P-3a Individual Modification

MODIFICATION TITLE: Liquid Breathing Oxygen To On Board Oxygen generation System (OBOGS)

MODELS OF SYSTEMS AFFECTED: EA-6B, E2, C2, F/A-18 TYPE MODIFICATION: Common Aircrew System (Cost Reduction & Safety)

DESCRIPTION/JUSTIFICATION: This modification is referred to as LOX-to-OBOGS (LTO) and is part of a cost reduction initiative to eliminate the need for manufacturing and storing of liquid oxygen. Generating breathing oxygen during flight with OBOGS has been utilized for 15 years and has eliminated the need for liquid oxygen in newer aircraft. However, older aircraft still require the use of liquid oxygen with the attendant costs, safety hazards, and mission limitations. The OBOGS works by using compressed air from the aircraft engine, passing it through a heat exchanger to reduce air temperature, and then through a concentrator to remove nitrogen thus providing an oxygen enriched breathing gas for the aircrew. An oxygen monitor is installed in the aircraft to ensure adequate oxygen generation.

DEVELOPMENT STATUS/MAJOR DEVELOPMENT MILESTONES: OBOGS is a mature technology. Plans to continue NRE into FY04, and begin production in FY05. Congress in FY03 added \$1.0M and \$3.5M for EA-6B and E-2C, respectively, to accelerate the OBOGS integration for these platforms. The quantities, schedules, and costs for the EA-6B and E-2 have been adjusted for the Congressional plus up and the latest budget guidance.

FINANCIAL PLAN: (TOA, \$ in Millions)

	Prior Years		FY 2003		FY 2004		FY 2005		FY 2006		FY 2007		FY 2008		FY2009		To Complete		Total		
	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	
RDT&E																					
PROCUREMENT																					
Installation Kits																					
C-2A Installation Kit							1	0.1													
E-2C Installation Kit					3	0.3	4	0.3													
EA6B Installation Kit					3	0.3	4	0.3													
F/A-18 Installation Kit							1	0.1													
Installation Kits N/R						2.2															
Installation Equipment																					
C-2A OBOGS Equip							1	0.1													
E-2C OBOGS Equip					3	0.2	4	0.2													
EA-6B OBOGS Equip					3	0.2	4	0.2													
F/A-18 OBOGS Equip							1	*													
Installation Equipment N/R				0.5		0.9															
Engineering Change Orders																					
XXX Kit ECO XXX																					
XXX Equip ECO XXX																					
Data						0.7		1.4													
Training Equipment																					
Support Equipment																					
ILS						0.5		0.4													
Other Support						1.0		1.2													
Interim Contractor Support																					
Installation Cost								6	0.6												
<b>Total Procurement</b>				<b>0.5</b>		<b>6.3</b>		<b>4.9</b>													

1. Totals may not add due to rounding
2. Asterisk indicates amount less than \$50K

Exhibit P-3a  
 MODELS OF SYSTEMS AFFECTED: EA-6B, E2, C2, FA/18 MODIFICATION TITLE: Liquid Oxygen to On-Board Oxygen Generation System (LTO)

INSTALLATION INFORMATION: **NAVY DURING SDLM, NAVY DRIVE-IN MOD, CONTRACTOR DURING SDLM, CONTRACTOR DRIVE-IN MOD**

METHOD OF IMPLEMENTATION: **DEPOT, CONTRACTOR**

ADMINISTRATIVE LEAD-TIME: 6 Months PRODUCTION LEAD-TIME: 12 Months

CONTRACT DATES: FY 2003: \_\_\_\_\_ FY 2004: Mar-04 FY 2005: Mar-05

DELIVERY DATE: FY 2003: \_\_\_\_\_ FY 2004: Mar-05 FY 2005: Oct-05

(\$ in Millions)

Cost:	Prior Years		FY 2003		FY 2004		FY 2005		FY 2006		FY 2007		FY 2008		FY 2009		To Complete		TOTAL		
	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	
FY 2002 & PY ( ) kits																					
FY 2003 ( ) kits																					
FY 2004 ( 6 ) kits							6	0.6													
FY 2005 ( ) kits																					
FY 2006 ( ) kits																					
FY 2007 ( ) kits																					
FY 2008 ( ) kits																					
FY 2009 ( ) kits																					
To Complete ( ) kits																					
TOTAL							6	0.6													

Installation Schedule

FY 2002 & Prior	FY 2003				FY 2004				FY 2005				FY 2006			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
In											3	3				
Out											3	3				

	FY 2007				FY 2008				FY 2009				To Complete	TOTAL
	1	2	3	4	1	2	3	4	1	2	3	4		
In														
Out														

Exhibit P-3a Individual Modification

MODIFICATION TITLE: CW Detectors

MODELS OF SYSTEMS AFFECTED: CH-53 TYPE MODIFICATION: SAFETY

DESCRIPTION/JUSTIFICATION: Installation of the Joint Chemical Agent Detector (JCAD) will automatically and simultaneously detect, identify, and quantify CW agent vapors by agent class (e.g. nerve, blister, and blood agents). The JCAD Detectors will be procured and provided to the NAVAIRSYSCOM by the Joint Chemical Biological Defense Program (CBDP) Office. The CH-53 installation has 2 JCADS per platform. Installation of the Joint Service Lightweight Standoff Chemical Agent Detector (JSLSCAD) on the CH-53 will provide standoff detection of CW agents at a distance of 0 to 5 km. The CH-53 installation has 1 JSLSCAD per platform.

DEVELOPMENT STATUS/MAJOR DEVELOPMENT MILESTONES: MS-C for JCAD detector is planned for 2QTR FY04. All CW Detector CH-53 installation equipment will be provided to NAVAIR by the CBDP procurements.

FINANCIAL PLAN: (TOA, \$ in Millions)

	Prior Years		FY 2003		FY 2004		FY 2005		FY 2006		FY 2007		FY 2008		FY2009		To Complete		Total		
	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	
RDT&E																					
PROCUREMENT																					
Installation Kits																					
JCAD Installation Kit							2	0.1													
JSLSCAD Installation Kit																					
Installation Kits N/R																					
Installation Equipment (Note 2)							2														
Installation Equipment N/R								0.1													
Engineering Change Orders								0.1													
Data								0.3													
Training Equipment								0.2													
Support Equipment								*													
ILS								0.2													
Other Support								1.2													
Interim Contractor Support								0.2													
Installation Cost							2	0.1													
<b>Total Procurement</b>								<b>2.5</b>													

Notes:

- Totals may not add due to rounding
- JCAD installation equipment will be procured and provided by the CBDP at no cost.
- Asterisk indicates amount less than \$50K

**Exhibit P-3a**

MODELS OF SYSTEMS AFFECTED: CH-53 MODIFICATION TITLE: CW DETECTORS

INSTALLATION INFORMATION:

METHOD OF IMPLEMENTATION: \_\_\_\_\_ Contractor or Field Mod Team

ADMINISTRATIVE LEADTIME: NA PRODUCTION LEADTIME: NA

CONTRACT DATES: FY 2003: \_\_\_\_\_ FY 2004: \_\_\_\_\_ FY 2005: \_\_\_\_\_

DELIVERY DATE: FY 2003: \_\_\_\_\_ FY 2004: \_\_\_\_\_ FY 2005: \_\_\_\_\_

(\$ in Millions)

Cost:	Prior Years		FY 2003		FY 2004		FY 2005		FY 2006		FY 2007		FY 2008		FY 2009		To Complete		TOTAL		
	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	
FY 2002 & PY ( ) kits																					
FY 2003 ( ) kits																					
FY 2004 ( ) kits																					
FY 2005 ( ) kits							2	0.1													
FY 2006 ( ) kits																					
FY 2007 ( ) kits																					
FY 2008 ( ) kits																					
FY 2009 ( ) kits																					
To Complete ( ) kits																					
<b>TOTAL</b>							<b>2</b>	<b>0.1</b>													

Installation Schedule

FY 2002 & Prior	FY 2004				FY 2005				FY 2006			
	1	2	3	4	1	2	3	4	1	2	3	4
In							2					
Out							2					

	FY 2007				FY 2009				To Complete	TOTAL
	1	2	3	4	3	4	1	2		
In										
Out										

Exhibit P-40, BUDGET ITEM JUSTIFICATION										DATE: February 2004		
APPROPRIATION/BUDGET ACTIVITY					P-1 ITEM NOMENCLATURE							
Aircraft Procurement, Navy/APN-5 Aircraft Modifications					Common ECM Modifications							
Program Element for Code B Items:					Other Related Program Elements							
	Prior Years	ID Code		FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	To Complete	Total
QTY		A										
COST (In Millions)	445.2	A		28.4	25.6	43.2	57.7	40.9	41.0	41.7	564.0	1,287.8
<p>This line item funds common equipment (B kits) for multiple aircraft. The overall goal of the modification budget is to provide a reprogrammable radar and missile warning system, provide attacking missile declaration and sector direction finding, laser detection, and self production capability devices to applicable user aircraft.</p>												
(TOA, \$ in Millions)												
<u>OSTP No.</u>	<u>Description</u>	<u>Prior Years</u>		<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>	<u>FY 2008</u>	<u>FY 2009</u>	<u>To Complete</u>	<u>Total</u>
72-88	AN/AAR-47 MAWS Hardware	178.1		10.0	8.7	6.9	8.4	0.7			33.6	246.4
14-90	AN/APR-39 (V)2 RWR & AN/AVR 2 Hardware	158.6		2.9	5.1						29.3	195.9
30-92	LAU 138A/A BOL System	38.9		0.7								39.6
26-99	AN/ALR 67(V)3 & 4	48.6		3.4							247.7	299.7
06-00	ALE-39 to 47 Retrofit	21.0		7.1								28.1
007-03	IDECM			4.3	11.9	36.3	49.3	40.2	41.0	41.7	253.4	478.1
<b>Total</b>		<b>445.2</b>		<b>28.4</b>	<b>25.6</b>	<b>43.2</b>	<b>57.7</b>	<b>40.9</b>	<b>41.0</b>	<b>41.7</b>	<b>564.0</b>	<b>1,287.8</b>
<b>Note: Totals may not add due to rounding.</b>												







Exhibit P-3a Individual Modification

MODIFICATION TITLE: AN/ALR-67(V)3&4 Radar Receiving Set (OSIP 026-99)

MODELS OF SYSTEMS AFFECTED: F/A-18 TYPE MODIFICATION: Mission Capability

DESCRIPTION/JUSTIFICATION: DESCRIPTION/JUSTIFICATION: This Operational, Safety and Improvement Program (OSIP) provides for the procurement of common equipment for the F/A-18. Provisions, i.e., airframe changes needed for the installation of this equipment, are budgeted separately.

The AN/ALR-67(V)3 is a radar warning receiver designed to enhance pilot situational awareness by providing accurate identification, lethality and azimuth displays of hostile and friendly emitters. It also controls the electronic warfare (EW) data bus and interfaces with other EW systems, the onboard radar, airborne mission computer, and other weapons systems. The Radar Warning Receiver's (RWR) Operational Requirements Document (ORD) number is 360-88-94 dated 27 May 94. The total number of systems is 698 (150 F/A-18 C/Ds and 548 F/A-18 E/Fs).

DEVELOPMENT STATUS/MAJOR DEVELOPMENT MILESTONES: The AN/ALR-67(V)3 system is in the Production Fielding/Deployment and Operational Support Phase. The system received Milestone III approval in July 99 and awarded a full rate production contract option in August 99. OPEVAL was successfully completed in Feb 99. Production delivery commenced July 2000. The FY03 funding will be used to fund efforts on the obsolete processor replacement and to address other obsolete parts issues.

FINANCIAL PLAN: (TOA, \$ in Millions)

	Prior Years		FY 2003		FY 2004		FY 2005		FY 2006		FY 2007		FY 2008		FY 2009		To Complete		Total		
	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	
RDT&E		190.4																			
PROCUREMENT																					
Installation Kits																					
Installation Kits N/R																					
Installation Equipment																					
AN/ALR-67(V)3 Equip	17	23.8																			
Install Equip Processor Replacem																					
Install Equip N/R (Engineering)		0.7																			
Engineering Change Orders		0.4		0.9																	
Equip ECO																					
Data																					
Training Equipment																					
Support Equipment																					
ILS																					
Other Support		23.8		2.5																	
Interim Contractor Support																					
Installation Cost																					
<b>Total Procurement</b>		<b>48.6</b>		<b>3.4</b>																	

Notes:  
1. Totals may not add due to rounding

Exhibit P-3a	Individual Modification																																																																																																																																																																																																																																																																																																																																																																																																																																																																											
MODIFICATION TITLE:	<u>AN/ALE-47 Dispenser System Retrofit (OSIP 06-00)</u>																																																																																																																																																																																																																																																																																																																																																																																																																																																																											
MODELS OF SYSTEMS AFFECTED:	<u>F-14B/D(114), CH-53E(157),EA-6B(3), AH-1W (82)</u>																																																																																																																																																																																																																																																																																																																																																																																																																																																																											
	TYPE MODIFICATION: <u>Mission Capability</u>																																																																																																																																																																																																																																																																																																																																																																																																																																																																											
<p>DESCRIPTION/JUSTIFICATION: The replacement of the AN/ALE-39 Dispenser System with the AN/ALE-47 Dispenser System will correct some serious safety problems while at the same time greatly improve aircraft survivability. The AN/ALE-39 system has serious problems with Things Falling Off Aircraft (TFOA) as well as numerous occurrences of uncommanded firing of chaff and flare stores. The reliability of the ALE-39 is another major factor with continuous reports of hung or unfired stores, a serious ground safety concern as well as a serious aircraft survivability concern. The AN/ALE-47 System has been developed to correct the safety issues of the ALE-39. USD(Acq) memo of Nov 86 directed U.S. Navy and U.S. Army to participate in EMD phase. Air Force Statement of Operational Requirements Document (SOR) number 341.88-11-D of 8 July 92. OSIP 06-00 has been cancelled beginning FY04. This submittal represents a reduction of installs from 1103 aircraft down to 356 aircraft. And includes procurement of 1000 ALE-39 replacement Sequencer Switches for installation on ALE-39 equipped aircraft which will not be receiving ALE-47 under the previous OSIP 06-00 plan.</p> <p>DEVELOPMENT STATUS/MAJOR DEVELOPMENT MILESTONES: The AN/ALE-47 System is in production and being installed in multiple U.S. Navy and Marine aircraft. MS III decision awarded Mar 93. FY 00 systems to be procured under Air Force contract F33657-96-D-0001. FY 01-03 systems procured under follow on ID/IQ contract F09603-01-D-0367.</p> <p>FINANCIAL PLAN: (TOA, \$ in Millions)</p>																																																																																																																																																																																																																																																																																																																																																																																																																																																																												
	<table border="1" style="width: 100%; border-collapse: collapse; text-align: center;"> <thead> <tr> <th rowspan="2"></th> <th colspan="2">Prior Years</th> <th colspan="2">FY 2003</th> <th colspan="2">FY 2004</th> <th colspan="2">FY 2005</th> <th colspan="2">FY 2006</th> <th colspan="2">FY 2007</th> <th colspan="2">FY 2008</th> <th colspan="2">FY 2009</th> <th colspan="2">To Complete</th> <th colspan="2">Total</th> </tr> <tr> <th>Qty</th> <th>\$</th> </tr> </thead> <tbody> <tr> <td>RDT&amp;E</td> <td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td> </tr> <tr> <td>PROCUREMENT</td> <td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td> </tr> <tr> <td>Installation Kits</td> <td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td> </tr> <tr> <td>TACAIR/Helos Kit</td> <td>274</td><td>0.9</td><td>82</td><td>0.3</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td> </tr> <tr> <td>Installation Kits N/R</td> <td></td><td>1.2</td><td></td><td>0.6</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td> </tr> <tr> <td>Installation Equipment</td> <td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td> </tr> <tr> <td>TACAIR/Helos</td> <td>274</td><td>9.5</td><td>82</td><td>2.2</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td> </tr> <tr> <td>ALE-39 Sequencer Switches</td> <td>500</td><td>1.1</td><td>375</td><td>0.9</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td> </tr> <tr> <td>Installation Equipment N/R</td> <td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td> </tr> <tr> <td>Engineering Change Orders</td> <td></td><td>0.3</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td> </tr> <tr> <td>Data</td> 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<td></td><td>3.7</td><td></td><td>1.4</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td> </tr> <tr> <td>Interim Contractor Support</td> <td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td> </tr> <tr> <td>Installation Cost</td> <td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td> </tr> <tr> <td>TACAIR/Helos</td> <td>258</td><td>1.5</td><td>98</td><td>0.3</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td> </tr> <tr> <td><b>Total Procurement</b></td> <td></td><td><b>21.0</b></td><td></td><td><b>7.1</b></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td> </tr> </tbody> </table>		Prior Years		FY 2003		FY 2004		FY 2005		FY 2006		FY 2007		FY 2008		FY 2009		To Complete		Total		Qty	\$	RDT&E																						PROCUREMENT																						Installation Kits																						TACAIR/Helos Kit	274	0.9	82	0.3																		Installation Kits N/R		1.2		0.6																		Installation Equipment																						TACAIR/Helos	274	9.5	82	2.2																		ALE-39 Sequencer Switches	500	1.1	375	0.9																		Installation Equipment N/R																						Engineering Change Orders		0.3																				Data																						Training Equipment		1.4		0.5																		Support Equipment		1.0		0.8																		ILS		0.4		0.1																		Other Support		3.7		1.4																		Interim Contractor 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Exhibit P-3a		Individual Modification																			
MODIFICATION TITLE:		Integrated Defensive Electronic Countermeasures (IDECM), Radio Frequency Countermeasures (RFCM)										OSIP 007-03									
MODELS OF SYSTEMS AFFECTED:		F/A-18						TYPE MODIFICATION:				Mission Capability									
<p>DESCRIPTION/JUSTIFICATION: The RFCM subsystem consists of a technique generator and fiber optic towed decoy, which integrates with a Radar Warning Receiver (RWR), countermeasures dispensing set (CMDS), and associated cockpit controls and displays to provide the lead aircraft (F/A-18E/F) with increased survivability against Radio Frequency (RF) threats. The Operational Requirements Document number is 494-88-98. The number of systems is 424 plus spares for the F/A-18E/F. This Operational Safety Improvement Program (OSIP) procures RFCM for retrofit into F/A-18E/F aircraft. FY03 includes funding for ALR-67V3 integration, ORD 360-88-94.</p> <p>DEVELOPMENT STATUS/MAJOR DEVELOPMENT MILESTONES: The IDECM RFCM program is currently in E&amp;MD. MS 0,I, II approval was granted 26 October 1995. The IDECM RFCM subsystem completed an OA in the second quarter of FY00 leading to an NPR , LRIPI 1Q FY01 , LRIPII 1Q FY02, and LRIPIII 3Q FY03. FRPI is scheduled for 2Q FY04.</p>																					
FINANCIAL PLAN: (TOA, \$ in Millions)																					
	Prior Years		FY 2003		FY 2004		FY 2005		FY 2006		FY 2007		FY 2008		FY 2009		To Complete		Total		
	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	
RDT&E		361.6		13.1		13.6															
PROCUREMENT																					
Installation Kits																					
Installation Kits N/R																					
Installation Equipment					3	7.5	12	30.9													
Installation Equipment N/R						2.0		3.9													
Engineering Change Orders																					
Kit ECO																					
Equip ECO				0.8																	
Data						0.4		0.2													
Training Equipment																					
Support Equipment																					
ILS						*		*													
Other Support				3.6		2.0		1.3													
Interim Contractor Support																					
Installation Cost																					
<b>Total Procurement</b>				<b>4.3</b>		<b>11.9</b>		<b>36.3</b>													
Notes: 1. Totals may not add due to rounding 2. Asterisk indicates amount less than \$50K																					

CLASSIFICATION: <b>UNCLASSIFIED</b>												
Exhibit P-40, BUDGET ITEM JUSTIFICATION										DATE: <b>February 2004</b>		
APPROPRIATION/BUDGET ACTIVITY <i>Aircraft Procurement, Navy/APN-5 Aircraft Modifications</i>							P-1 ITEM NOMENCLATURE <i>Common Avionics</i>					
Program Element for Code B Items:							Other Related Program Elements					
	Prior Years	ID Code		FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	To Complete	Total
QTY		A										
COST (In Millions)	734.5	A		68.7	147.5	167.5	225.6	201.2	182.3	173.6	1,154.1	3,055.0
<p>This line item funds common avionics equipment for multiple aircraft. With the exception of OSIPs 43-94 (Flight Data Recorders), 14-97 (KC-130T GPWS), 17-98 (Helo GPWS), and 24-99 (CAS), the individual aircraft platforms fund the "A" kits and installation in the appropriate aircraft line.</p> <p>The specific modifications budgeted and programmed are: (1) The NAVSTAR GPS (Global Positioning System) is designed to provide a highly accurate passive position (16 meters) velocity (0.1 meter/sec) and time to users worldwide in all weather conditions. The GPS will interface with communication, navigation, and weapon systems equipment (standard attitude heading reference systems, inertial navigation systems, on-board computers, etc.) in selected applications. GPS is a DoD mandated requirement for all aircraft operating in the National Air Space System after the year 2000. (2) The AN/ARC-210 Electronic Protection (EP) Combination Radio provides dual UHF capability for CV based TACAIR; VHF AM for close air support and maritime channels; VHF AM for air traffic control; and EP capabilities. The AN/ARC-210 can be controlled by either a remote control unit or via MIL-STD-1553 multiplex data bus. (3) The Crash Survivable Flight Incident Recorder (CSFIR) is a crash hardened recorder which will be used in support of aircraft mishap and incident investigations. (4) The Embedded Global Positioning System/Inertial Navigation System (EGI) contains full Precise Position Service GPS on a single electronic module, plus a state-of-the-art Ring Laser Gyro inertial navigation system. (5) The AN/ARC-182 Reuse Programs utilizes previously procured AN/ARC-182 systems which will become available as the AN/ARC-210 system is retrofitted into Navy aircraft. (6) The Ground Proximity Warning System (GPWS) provides visual and aural warnings to the pilot when the aircraft is in conditions that could result in a controlled flight into terrain accident. (7) The Traffic Alert &amp; Collision Avoidance System (TCAS) will provide a display of situation awareness to aid in the prevention of mid-air mishaps. (8) The Advanced Mission Computer and Display (AMC&amp;D) system will replace existing aging/obsolete and performance limited AN/AJK-14(V) Mission Computer and Contractor Furnished Equipment Displays. (9) The Tactical Air Moving Map Capability (TAMMAC), the common solution for US Naval Aviation, provides a common tactical aircraft moving map and data loading capability and replaces current obsolete Fleet equipment. (10) Communication Navigation Surveillance/ Air Traffic Management (CNS/ATM) provides civil upgrades to communications, navigation, and surveillance systems enabling shift from Air Traffic Control to Air Traffic Management in increasingly congested airspace and frequency spectrum. (11) HH-60 H A/A24G-39 AHRs Reliability Improvement Program. (12) Aircrew Wireless Intercom Communications System (AWICS) will provide a wireless, spread spectrum intercom system to allow for unimpeded movement throughout the aircraft and prevent aircrew/passenger entanglement with intercom system cords in the event of mishap. (13) Attitude Gyro Upgrade replaces obsolete gyros with a more reliable and, maintainable gyro. The overall goal of the modifications budgeted in FY 2005 is to procure the common equipment required for the individual aircraft platforms. The specific modifications budgeted and programmed are:</p>												
(TOA, \$ in Millions)												
OSIP No.	Description	Prior Years		FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	To Complete	Total
71-88	NAVSTAR GPS (Hardware)	282.0		4.4	2.3		17.9	22.2	22.6	23.0	381.0	755.5
04-94	AN/ARC-210 (Hardware)	221.2		7.9	26.9	23.6	9.9	1.5				291.0
43-94	Crash Survivable Flight Incident Recorders (CSFIR)	74.0		4.8	4.2	3.7	1.5					88.3
40-95	AN/ARC-182 Reuse Program	2.2		0.2	0.1							2.6
14-97	GPWS (CAT I) Fixed Wing	38.3		13.4	18.0	1.9	13.8	9.3	9.1	5.6	9.1	118.4
17-98	GPWS (CAT III) Rotary Wing	53.1		10.6	7.3	3.0	0.3					74.2
25-98	Traffic Alert & Collision Avoidance System (TCAS)	42.8		5.3	5.9	3.3	4.9	4.0	1.9	0.9		69.0
21-01	CNS/ATM	0.8		0.6	22.8	70.7	85.0	80.7	69.5	82.1	569.8	982.0
02-02	Tactical Air Moving Map Capability (TAMMAC)	1.9		4.5	17.2	15.0	17.1	20.1	15.1	6.4	3.5	100.8
01-02	AMC&D/MPCD	18.1		17.0	35.1	23.4	54.5	42.3	45.9	49.1	132.0	417.6
07-04	Attitude Gyro Upgrade				4.4	15.0	12.4	12.7	13.3	1.8		59.6
08-04	HH-60 AHRs Reliability & Improvement (CREI)				1.0	0.7						1.7
09-04	Aircrew Wireless Internal Communications System (AWICS)				2.2	7.3	8.4	8.4	4.9	4.7	58.6	94.5
<b>Total</b>		<b>734.5</b>		<b>68.7</b>	<b>147.5</b>	<b>167.5</b>	<b>225.6</b>	<b>201.2</b>	<b>182.3</b>	<b>173.6</b>	<b>1,154.1</b>	<b>3,055.0</b>
<b>Note: Totals may not add due to rounding.</b>												

Exhibit P-3a Individual Modification

MODIFICATION TITLE: Global Positioning System (GPS) (OSIP 71-88)

MODELS OF SYSTEMS AFFECTED: All aircraft TYPE MODIFICATION: Common Avionics (Safety) (Added Capability)

DESCRIPTION/JUSTIFICATION: The NAVSTAR GPS is designed to provide highly accurate passive position (16 meters), velocity (0.1 meter/sec) and time to users worldwide in all weather conditions. GPS will be integrated with communication, navigation, and weapon systems equipment (altitude heading reference systems, inertial navigation systems, mission computers, etc.). This OSIP procures the GPS B-kit equipment (receivers, antennas, amplifiers, CDNU, DDS, SDC, etc.) as required for the above platforms. Hardware configuration varies depending on the TMS of the aircraft. Approximately 2500 aircraft will be modified with equipment provided through this OSIP. The Global Positioning System Operational Requirement Document (ORD) 003-78 dated 22 Jan 90 was based on an Air Force General Operating Requirement (GOR) dated 28 Jan 1978. The Navy ORD for Enhanced GPS User Equipment for Navigation Warfare and GPS Modernization was approved on 7 June 2000.

DEVELOPMENT STATUS/MAJOR DEVELOPMENT MILESTONES: The NAVSTAR GPS program completed Phase II (Full Scale Engineering Development) and completed Milestone IIIA (Approval for Limited Production) in June 1986. Milestone IIIB (Approval for Full Production) was completed in January 1992. Research, Development, Test and Evaluation, Navy (RDT&E,N) is funded under program element #0604777N.

FINANCIAL PLAN: (TOA, \$ in Millions)

	Prior Years		FY 2003		FY 2004		FY 2005		FY 2006		FY 2007		FY 2008		FY2009		To Complete		Total		
	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	
RDT&E																					
PROCUREMENT																					
Installation Kits																					
NAVWAR	84	1.1	45	0.6																	
Installation Kits N/R																					
Installation Equipment																					
GPS	2,047	173.8																			
NAVWAR	129	4.7																			
Installation Equipment N/R		18.1																			
Engineering Change Orders		0.2		*																	
Data		7.7		*																	
Training Equipment																					
GPS	114	7.8																			
NAVWAR	1	0.1		*																	
Support Equipment		0.3																			
ILS		0.1		0.2																	
Other Support		67.7		2.3		1.9															
Interim Contractor Support																					
Installation Cost																					
NAVWAR	25	0.3	87	1.2	17	0.4															
<b>Total Procurement</b>		<b>282.0</b>		<b>4.4</b>		<b>2.3</b>															

Notes:

1. Totals may not add due to rounding
2. Asterisk indicates amount less than \$50K

Exhibit P-3a

MODELS OF SYSTEMS AFFECTED: All aircraft MODIFICATION TITLE: Global Positioning System (GPS) (OSIP 71-88)

INSTALLATION INFORMATION:

METHOD OF IMPLEMENTATION: Equipment is provided to the platform PMA and installed as per airframe ECP/AFC.

ADMINISTRATIVE LEADTIME: Three to Six Months PRODUCTION LEADTIME: Six to Twelve Months

CONTRACT DATES: FY 2003: Oct-02 FY 2004: \_\_\_\_\_ FY 2005: \_\_\_\_\_

DELIVERY DATE: FY 2003: Apr-03 FY 2004: \_\_\_\_\_ FY 2005: \_\_\_\_\_

(\$ in Millions)

Cost:	Prior Years		FY 2003		FY 2004		FY 2005		FY 2006		FY 2007		FY 2008		FY 2009		To Complete		TOTAL	
	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$
FY 2002 & PY ( ) kits	25	0.3	59	0.8																
FY 2003 ( ) kits			28	0.4	17	0.4														
FY 2004 ( ) kits																				
FY 2005 ( ) kits																				
FY 2006 ( ) kits																				
FY 2007 ( ) kits																				
FY 2008 ( ) kits																				
FY 2009 ( ) kits																				
To Complete ( ) kits																				
<b>TOTAL</b>	<b>25</b>	<b>0.3</b>	<b>87</b>	<b>1.2</b>	<b>17</b>	<b>0.4</b>														

Installation Schedule

	FY 2002 & Prior	FY 2003				FY 2004				FY 2005				FY 2006				FY 2007			
		1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
In	25	21	22	22	22	17															
Out	25	21	22	22	22	17															

	FY 2008				FY 2009				To Complete	Total
	1	2	3	4	1	2	3	4		
In										
Out										

Exhibit P-3a Individual Modification

MODIFICATION TITLE: AN/ARC-210 Electronic Protection (EP) Combination Radio (OSIP 04-94)

MODELS OF SYSTEMS AFFECTED: AH-1W, AV-8B, C-2, CH-46E, C/MH-53D/E, EA-6B, KC-130F/R/T, F/A-18C/D, UH-1N, C-130, HH-60 TYPE MODIFICATION: Common Avionics Modification

DESCRIPTION/JUSTIFICATION: The AN/ARC-210 is a combination UHF/VHF, AM/FM jam-resistant radio that was developed to allow for EP interoperability with the Air Force, Army and NATO. The radio provides dual UHF capability for CV based TACAIR; VHF AM for close air support and maritime channels; VHF AM for air traffic control; and EP capabilities using the Air Force developed waveforms (UHF-AM HAVEQUICK I and II), and the Army developed waveform (VHF-FM SINGGARS). The AN/ARC-210 can be controlled by either a remote control unit or via a MIL-STD-1553 multiplex data bus. The EP parameters and single channel preset information can be loaded via a CYZ-10 Data Transfer Device (DTD). The fill information can consist of word-of-the-day for HAVEQUICK; the KGV-10 transec variable, hopssets and frequency lock-out tables for SINGGARS. Engineering Change Proposal (ECP) 12 incorporated embedded Demand Assigned Multiple Access (DAMA) Satellite Communications (SATCOM), embedded COMSEC, embedded Variable Message Format (VMF), Link 4A, and is compatible with the memory loader verifier. ORD # 333-06-93 dated 4/20/93 validated this modification.

DEVELOPMENT STATUS/MAJOR DEVELOPMENT MILESTONES: The AN/ARC-210 Common OSIP provides B-kits and common logistics requirements to multiple aircraft. Individual platform OSIPs include non-recurring engineering, integration, A-kit manufacturing and unique aircraft logistic requirements. Full rate Production Decision was approved in May 1994. Incorporation of these hardware mods will be accomplished via an ECP to the production receiver/transmitters configuration. Corresponding platform OSIP numbers; C-2A OSIP 24-94; AH-1W OSIP 3-93; AV-8B OSIP 23-93; CH-46E OSIP 9-92; EA-6B OSIP 42-93; F/A-18C/D OSIP 39-92 and 10-99; K/C-130F/R/T OSIP 2-92; UH-1N OSIP 15-92; CH/MH-53D/E OSIP 11-92.

FINANCIAL PLAN: (TOA, \$ in Millions)

	Prior Years		FY 2003		FY 2004		FY 2005		FY 2006		FY 2007		FY 2008		FY2009		To Complete		Total		
	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	
RDT&E																					
PROCUREMENT																					
Installation Kits																					
AN/ARC-210 Kit					28	2.6	50	1.6													
Installation Kits N/R						3.1		1.5													
Installation Equipment																					
AN/ARC-210 Equip	2,661	157.0	34	2.6	242	16.1	193	13.5													
Installation Equipment N/R		4.8		0.1		0.1		0.8													
Engineering Change Orders		8.0																			
Data		4.2		0.4		0.2		0.3													
Training Equipment	36	2.9		0.1		*		0.1													
Support Equipment		9.4		0.1		0.2		0.2													
ILS		9.5		1.0		1.4		1.6													
Other Support		25.5		3.6		3.3		3.5													
Interim Contractor Support																					
Installation Cost								7	0.6												
<b>Total Procurement</b>		<b>221.2</b>		<b>7.9</b>		<b>26.9</b>		<b>23.6</b>													

Notes:

1. Totals may not add due to rounding
2. Asterisk indicates amount less than \$50K
3. A-Kits for F/A-18C/D and KC-130 procured in FY 04-06. Installs are reflected in platform OSIP's.
4. A kits in FY04-06 are for KC-130, F/A-18C/D, HH-60

**Exhibit P-3a**

MODELS OF SYSTEMS AFFECTED: HH-60 MODIFICATION TITLE: AN/ARC-210 Electronic Protection (EP) Combination Radio (OSIP 04-94)

INSTALLATION INFORMATION:

METHOD OF IMPLEMENTATION: Prime Contractor

ADMINISTRATIVE LEADTIME: 5 Months PRODUCTION LEADTIME: 12 Months

CONTRACT DATES: FY 2003: \_\_\_\_\_ FY 2004: Mar-04 FY 2005: Mar-05

DELIVERY DATE: FY 2003: \_\_\_\_\_ FY 2004: Feb-05 FY 2005: Feb-06

(\$ in Millions)

Cost:	Prior Years		FY 2003		FY 2004		FY 2005		FY 2006		FY 2007		FY 2008		FY 2009		To Complete		TOTAL		
	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	
FY 2002 & PY ( ) kits																					
FY 2003 ( ) kits																					
FY 2004 ( ) kits **							7	0.6													
FY 2005 ( ) kits **																					
FY 2006 ( ) kits																					
FY 2007 ( ) kits																					
FY 2008 ( ) kits																					
FY 2009 ( ) kits																					
To Complete ( ) kits																					
<b>TOTAL</b>							<b>7</b>	<b>0.6</b>													

\*Note: KC-130 installation reflected in OSIP 02-92.  
 F/A-18 installations are reflected in OSIP 10-99.  
 Installation Schedule

	FY 2002 & Prior	FY 2003				FY 2004				FY 2005				FY 2006				FY 2007				
		1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	
In											1	3	3									
Out											1	3	3									

	FY 2008				FY 2009				To Complete	Total
	1	2	3	4	1	2	3	4		
In										
Out										

Exhibit P-3a Individual Modification

MODIFICATION TITLE: Crash Survivable Flight Incident Recorders (CSFIR) (OSIP 43-94)

MODELS OF SYSTEMS AFFECTED: AV-8B, F/A-18, VH-3D/60N, C/T-130, C-2, C-12, T-39, U/VP-3 TYPE MODIFICATION: Common Avionics Modification

DESCRIPTION/JUSTIFICATION: Chief of Naval Operations letter, Ser N8/5U640779 of 2 May 1995, directed the CSFIR implementation policy on Naval Aircraft. This modification will provide procurement and integrated logistics support of Navy common CSFIR and will include addressing obsolescence of commercial components. The CSFIR will be a crash hardened recorder of selective aircraft systems and position parameters to be used in support of aircraft mishap and incident investigations. RDC01-88-97 validate this modification.

DEVELOPMENT STATUS/MAJOR DEVELOPMENT MILESTONES: Commercial off-the-shelf and non-developmental systems will be procured to the maximum extent feasible via open competition. Completed F/A-18 val/ver in 3rd quarter FY00. F/A-18 installations delayed due to war-time efforts; schedule extended out into FY06.

FINANCIAL PLAN: (TOA, \$ in Millions)

	Prior Years		FY 2003		FY 2004		FY 2005		FY 2006		FY 2007		FY 2008		FY2009		To Complete		Total		
	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	
RDT&E																					
PROCUREMENT																					
Installation Kits																					
CSFIR Kit	342	11.8	23	0.1	40	0.1	27	0.1													
Installation Kits N/R	12	20.6																			
Installation Equipment																					
CSFIR Equip	359	8.2	23	0.4	40	0.8	27	0.5													
Installation Equipment N/R		3.6																			
Engineering Change Orders																					
Data		1.2																			
Training Equipment	2	0.4																			
Support Equipment		3.1		0.1		0.1															
ILS		2.7		0.4		0.4		0.4													
Other Support		14.3		3.1		2.1		2.1													
Interim Contractor Support																					
Installation Cost	259	8.122	50	0.7	50	0.7	46	0.7													
<b>Total Procurement</b>		<b>74.0</b>		<b>4.8</b>		<b>4.2</b>		<b>3.7</b>													

- Notes:
1. Totals may not add due to rounding
  2. Asterisk indicates amount less than \$50K

**Exhibit P-3a**

MODELS OF SYSTEMS AFFECTED: F/A-18, VH-3D/60N, C/T-130, C-2, C-12, T-39, U/VP-3      MODIFICATION TITLE: Crash Survivable Flight Incident Recorders (CSFIR) (OSIP 43-94)

INSTALLATION INFORMATION:

METHOD OF IMPLEMENTATION: Contractor or USN Field Modification Team

ADMINISTRATIVE LEADTIME: 2 Months      PRODUCTION LEADTIME: 10 Months

CONTRACT DATES:      FY 2003: Aug-03      FY 2004: Jan-04      FY 2005: Dec-04

DELIVERY DATE:      FY 2003: Aug-04      FY 2004: Nov-04      FY 2005: Oct-05

(\$ in Millions)

Cost:	Prior Years		FY 2003		FY 2004		FY 2005		FY 2006		FY 2007		FY 2008		FY 2009		To Complete		TOTAL		
	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	
FY 2002 & PY ( ) kits	259	8.1	50	0.7	35	0.5															
FY 2003 ( ) kits					15	0.2	8	0.1													
FY 2004 ( ) kits							38	0.5													
FY 2005 ( ) kits																					
FY 2006 ( ) kits																					
FY 2007 ( ) kits																					
FY 2008 ( ) kits																					
FY 2009 ( ) kits																					
To Complete ( ) kits																					
<b>TOTAL</b>	<b>259</b>	<b>8.1</b>	<b>50</b>	<b>0.7</b>	<b>50</b>	<b>0.7</b>	<b>46</b>	<b>0.7</b>													

Installation Schedule

FY 2002 & Prior	FY 2003				FY 2004				FY 2005				FY 2006				FY 2007				
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	
In	259	12	12	13	13	12	12	13	13	13	13	11	9								
Out	259	12	12	13	13	12	12	13	13	13	13	11	9								

	FY 2008				FY 2009				To Complete	Total
	1	2	3	4	1	2	3	4		
In										
Out										

Exhibit P-3a Individual Modification

MODIFICATION TITLE: AN/ARC-182 Reuse Modification Program (OSIP 40-95)

MODELS OF SYSTEMS AFFECTED: P-3C, S-3B, SH-2G TYPE MODIFICATION: Common Avionics Modification

DESCRIPTION/JUSTIFICATION: The AN/ARC-182 Modification Program will utilize previously procured AN/ARC-182 systems which will become available as the AN/ARC-210 system is retrofitted into Navy aircraft. The replaced AN/ARC-182 will be upgraded to meet the configuration needs of current AN/ARC-182 users vice procurement of a new system. The AN/ARC-182 modification will include receiver-transmitter and remote control units. Mounts, filters, switching units, and antennas will be procured by the platform OSIP to complete the aircraft AN/ARC-182 configuration requirements. ORD # W0661-CC dated 13 June 78, validates this modification.

DEVELOPMENT STATUS/MAJOR DEVELOPMENT MILESTONES: AN/ARC-182 is in production. Modified systems will be provided GFE to user platforms to meet aircraft installation requirements.

FINANCIAL PLAN: (TOA, \$ in Millions)

	Prior Years		FY 2003		FY 2004		FY 2005		FY 2006		FY 2007		FY 2008		FY2009		To Complete		Total		
	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	
RDT&E																					
PROCUREMENT																					
Installation Kits																					
AN/ARC-182 Kit																					
Installation Kits N/R																					
Installation Equipment																					
AN/ARC-182 Equip	154	0.6	26	0.1	35	0.1														215	0.7
Installation Equipment N/R																					
Engineering Change Orders																					
Data		0.2																			0.2
Training Equipment																					
Support Equipment																					
ILS																					
Other Support		1.5		0.1		0.0															1.7
Interim Contractor Support																					
Installation Cost																					
<b>Total Procurement</b>		<b>2.2</b>		<b>0.2</b>		<b>0.1</b>															<b>2.6</b>

Notes:

1. Totals may not add due to rounding
2. Asterisk indicates amount less than \$50K

Exhibit P-3a Individual Modification

MODIFICATION TITLE: Ground Proximity Warning System (GPWS CAT I) Fixed Wing (OSIP 14-97)

MODELS OF SYSTEMS AFFECTED: KC-130T/F/R, VP-3, C-2A, S-3, UP-3, EA-6B, T-45 TYPE MODIFICATION: Common Avionics Modification

DESCRIPTION/JUSTIFICATION: The Ground Proximity Warning System (GPWS) is a low-cost, highly reliable stand-alone commercial set built to provide reliable integration of on-board sensor data and provides an aural warning for excessive descent rate, terrain closure rate, inadvertent descent below glideslope and descent below minimum. Commercial GPWS implementation has shown a demonstrated dramatic reduction in controlled flight into terrain incidents. ECP-130-108 increases system safety by eliminating known deficiencies and applies to military application during normal and low level mission requirements. ORD # 555-88-00 signed 1 May 00 validates this modification.

DEVELOPMENT STATUS/MAJOR DEVELOPMENT MILESTONES: GPWS CAT-I OPEVAL (P-3C) was successfully completed October 1993. USAF retrofitting all C-130 T/M/S with same unit as part of Autopilot Upgrade Program. USAF OPEVAL in C-130.

FINANCIAL PLAN: (TOA, \$ in Millions)

	Prior Years		FY 2003		FY 2004		FY 2005		FY 2006		FY 2007		FY 2008		FY2009		To Complete		Total		
	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	
RDT&E																					
PROCUREMENT																					
Installation Kits																					
GPWS CAT I Kit	123	1.9	11	0.3	34	0.5															
Installation Kits N/R	1	7.9		0.9		1.6															
Installation Equipment																					
GPWS CAT I Equip	145	7.8	11	0.7	34	2.4															
Installation Equipment N/R		1.0		2.2		1.1															
Engineering Change Orders																					
Data		0.7				0.7															
Training Equipment	3	1.3		0.1		1.0															
Support Equipment																					
ILS		1.5		0.4		1.0		0.3													
Other Support		13.7		8.4		9.3		1.2													
Interim Contractor Support																					
Installation Cost	110	2.5	12	0.4	11	0.4	9	0.4													
<b>Total Procurement</b>		<b>38.3</b>		<b>13.4</b>		<b>18.0</b>		<b>1.9</b>													

Notes:

1. Totals may not add due to rounding
2. Asterisk indicates amount less than \$50K
3. Installation qty differ from Install kits/equipment due to installation of OFT trainers listed in training material.

Exhibit P-3a

MODELS OF SYSTEMS AFFECTED: KC-130T/F/R, VP-3, C-2A, S-3, UP-3, EA-6B, T-45 MODIFICATION TITLE: Ground Proximity Warning System (GPWS CAT I) Fixed Wing (OSIP 14-97)

INSTALLATION INFORMATION:

METHOD OF IMPLEMENTATION: Contractor or USN Field Modification Team

ADMINISTRATIVE LEADTIME: 4 Months PRODUCTION LEADTIME: 10 Months

CONTRACT DATES: FY 2003: Feb-03 FY 2004: Feb-04 FY 2005: None

DELIVERY DATE: FY 2003: Dec-03 FY 2004: Dec-04 FY 2005:

(\$ in Millions)

Cost:	Prior Years		FY 2003		FY 2004		FY 2005		FY 2006		FY 2007		FY 2008		FY 2009		To Complete		TOTAL		
	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	
FY 2002 & PY ( ) kits	110	2.5	12	0.4	1	*															
FY 2003 ( ) kits					10	0.4															
FY 2004 ( ) kits							8	0.3													
FY 2005 ( ) kits																					
FY 2006 ( ) kits																					
FY 2007 ( ) kits																					
FY 2008 ( ) kits																					
FY 2009 ( ) kits																					
To Complete ( ) kits																					
<b>TOTAL</b>	<b>110</b>	<b>2.5</b>	<b>12</b>	<b>0.4</b>	<b>11</b>	<b>0.4</b>	<b>9</b>	<b>0.4</b>													

Installation Schedule

FY 2002 & Prior	FY 2003				FY 2004				FY 2005				FY 2006				FY 2007				
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	
In	110	2	4	3	3	3	5	3		2	3	4									
Out	110	2	4	3	3	3	5	3		2	3	4									

	FY 2008				FY 2009				To Complete	Total
	1	2	3	4	1	2	3	4		
In										
Out										

Exhibit P-3a Individual Modification

MODIFICATION TITLE: Ground Proximity Warning System (GPWS CAT III) Rotary Wing (OSIP 17-98)

MODELS OF SYSTEMS AFFECTED: C/MH-53, H-46, H-60 TYPE MODIFICATION: Common Avionics Modification

DESCRIPTION/JUSTIFICATION: The Ground Proximity Warning System (GPWS), is a low-cost, highly reliable stand-alone commercial set built to provide reliable integration of on-board sensor data and provides an aural warning for excessive rate of descent, terrain closure rate, inadvertent descent below ILS glidescope and descent below minimum. Commercial GPWS implementation has demonstrated dramatic reduction in controlled flight into terrain (CFIT) accidents. NADEP CP ECP H53-004 and H46-75 will assist pilots in preventing collisions with the ground or water. ORD # 555-88-00 signed 1 May 00 validates this modification.

DEVELOPMENT STATUS/MAJOR DEVELOPMENT MILESTONES: GPWS CAT III completed Milestone II in July 1993. DT was fully successful in May 1996. OPEVAL was successfully completed in August 1996. Milestone III was completed in May 1997.

FINANCIAL PLAN: (TOA, \$ in Millions)

	Prior Years		FY 2003		FY 2004		FY 2005		FY 2006		FY 2007		FY 2008		FY2009		To Complete		Total		
	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	
RDT&E																					
PROCUREMENT																					
Installation Kits																					
GPWS CAT III Kit	362	3.8	48	0.5	49	0.5															
Installation Kits N/R		1.3																			
Installation Equipment																					
GPWS CAT III Equip **	363	16.6	48	3.3	49	2.0															
Installation Equipment N/R		9.1		0.2		0.2															
Engineering Change Orders																					
Data		1.0		0.1		0.2															
Training Equipment		1.4		0.1		0.2															
Support Equipment																					
ILS		1.2		0.3		0.2		0.1													
Other Support		14.5		4.6		2.8		1.7													
Interim Contractor Support																					
Installation Cost	280	4.2	80	1.5	48	1.4	51	1.2													
<b>Total Procurement</b>		<b>53.1</b>		<b>10.6</b>		<b>7.3</b>		<b>3.0</b>													

Notes:

1. Totals may not add due to rounding
2. Asterisk indicates amount less than \$50K
3. Two Asterisks indicate that one additional B-Kit was procured for software integration laboratory use in FY98.

Exhibit P-3a

MODELS OF SYSTEMS AFFECTED: C/MH-53, H-46, H-60 MODIFICATION TITLE: Ground Proximity Warning System (GPWS CAT III) Rotary Wing (OSIP 17-98)

INSTALLATION INFORMATION:

METHOD OF IMPLEMENTATION: Contractor or USN Depot Field Modification Team

ADMINISTRATIVE LEADTIME: 4 Months PRODUCTION LEADTIME: 10 Months

CONTRACT DATES: FY 2003: Feb-03 FY 2004: Feb-04 FY 2005: \_\_\_\_\_

DELIVERY DATE: FY 2003: Dec-03 FY 2004: Dec-04 FY 2005: \_\_\_\_\_

(\$ in Millions)

Cost:	Prior Years		FY 2003		FY 2004		FY 2005		FY 2006		FY 2007		FY 2008		FY 2009		To Complete		TOTAL		
	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	
FY 2002 & PY (362) kits	280	4.2	80	1.5	2	0.1														362	5.7
FY 2003 (48) kits					46	1.3	2	*												48	1.4
FY 2004 (49) kits							49	1.2												49	1.2
FY 2005 ( ) kits																					
FY 2006 ( ) kits																					
FY 2007 ( ) kits																					
FY 2008 ( ) kits																					
FY 2009 ( ) kits																					
To Complete ( ) kits																					
<b>TOTAL</b>	<b>280</b>	<b>4.2</b>	<b>80</b>	<b>1.5</b>	<b>48</b>	<b>1.4</b>	<b>51</b>	<b>1.2</b>												<b>459</b>	<b>8.2</b>

Installation Schedule

FY 2002 & Prior	FY 2003				FY 2004				FY 2005				FY 2006				FY 2007				
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	
In	280	20	20	20	12	12	12	12	13	13	13	12									
Out	280	20	20	20	12	12	12	12	13	13	13	12									

	FY 2008				FY 2009				To Complete	Total
	1	2	3	4	1	2	3	4		
In										459
Out										459

Exhibit P-3a Individual Modification

MODIFICATION TITLE: Traffic Alert & Collision Avoidance System (TCAS) (OSIP 25-98)

MODELS OF SYSTEMS AFFECTED: C-2, C-130T, VP-3, KC-130, UP-3 TYPE MODIFICATION: Common Avionics Modification

DESCRIPTION/JUSTIFICATION: CNO memorandum of 09 Nov 1999 directed TCAS implementation policy on Naval Aircraft. This modification will provide procurement and logistics support of a common TCAS. The TCAS will provide a display of situation awareness to aid in the prevention of midair mishaps. An ECP was approved in FY 99 to incorporate this change.

DEVELOPMENT STATUS/MAJOR DEVELOPMENT MILESTONES: TCAS Off-The-Shelf processor was selected. The ECP NRE effort for C-2, VP-3, and C-130T/KC-130 was accelerated and began in FY 98. Milestone III approved March FY01.

FINANCIAL PLAN: (TOA, \$ in Millions)

	Prior Years		FY 2003		FY 2004		FY 2005		FY 2006		FY 2007		FY 2008		FY2009		To Complete		Total		
	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	
RDT&E																					
PROCUREMENT																					
Installation Kits																					
TCAS Kit	80	5.1	9	1.1	14	1.4	4	0.2													
Installation Kits N/R	1	7.4																			
Installation Equipment																					
TCAS Equip	81	8.8	9	1.1	14	2.5	4	0.4													
Installation Equipment N/R		2.7																			
Engineering Change Orders		1.8																			
Data		1.8																			
Training Equipment	8	1.6		0.1																	
Support Equipment																					
ILS		1.7		0.2		0.2		0.2													
Other Support		8.9		2.0		1.4		1.6													
Interim Contractor Support																					
Installation Cost	67	3.0	12	0.7	9	0.4	15	0.8													
<b>Total Procurement</b>		<b>42.8</b>		<b>5.3</b>		<b>5.9</b>		<b>3.3</b>													

- Notes:
1. Totals may not add due to rounding
  2. Asterisk indicates amount less than \$50K

Exhibit P-3a

MODELS OF SYSTEMS AFFECTED: C-2, C-130T, VP-3, KC-130, UP-3 MODIFICATION TITLE: Traffic Alert & Collision Avoidance System (TCAS) (OSIP 25-98)

INSTALLATION INFORMATION:

METHOD OF IMPLEMENTATION: Contractor or USN Field Modification Team

ADMINISTRATIVE LEADTIME: 2 Months PRODUCTION LEADTIME: 12 Months

CONTRACT DATES: FY 2003: Dec-02 FY 2004: Dec-03 FY 2005: Dec-04

DELIVERY DATE: FY 2003: Dec-03 FY 2004: Dec-04 FY 2005: Dec-05

(\$ in Millions)

Cost:	Prior Years		FY 2003		FY 2004		FY 2005		FY 2006		FY 2007		FY 2008		FY 2009		To Complete		TOTAL	
	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$
FY 2002 & PY ( ) kits	67	3.0	12	0.7	1	-														
FY 2003 ( ) kits					8	0.4	1	0.1												
FY 2004 ( ) kits							14	0.8												
FY 2005 ( ) kits																				
FY 2006 ( ) kits																				
FY 2007 ( ) kits																				
FY 2008 ( ) kits																				
FY 2009 ( ) kits																				
To Complete ( ) kits																				
<b>TOTAL</b>	<b>67</b>	<b>3.0</b>	<b>12</b>	<b>0.7</b>	<b>9</b>	<b>0.4</b>	<b>15</b>	<b>0.8</b>												

Installation Schedule

	FY 2002 & Prior	FY 2003				FY 2004				FY 2005				FY 2006				FY 2007			
		1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
In	67	3	3	3	3	3	2	2	2	3	4	4	4								
Out	67	3	3	3	3	3	2	2	2	3	4	4	4								

	FY 2008				FY 2009				To Complete	Total
	1	2	3	4	1	2	3	4		
In										
Out										

Exhibit P-3a	Individual Modification																		
MODIFICATION TITLE:	<u>Communication - Navigation - Surveillance / Air Traffic Management (CNS/ATM) Systems (OSIP 21-01)</u>																		
MODELS OF SYSTEMS AFFECTED:	<u>P-3C, EP-3E, C/KC-130, C-2A, EA-6B, KC130J, VH-3D, VH-60N, F/A-18E/F, F/A-18C/D, E-2C, MH-60S, MH-60R, F/A-18A+, H-1, CH-53E, AV-8B, TAV-8B, UP/VP-3A, NP-3C/D, MV-22B, MH-53E</u> TYPE MODIFICATION: <u>Common Avionics Modification</u>																		
DESCRIPTION/JUSTIFICATION:																			
CNS/ATM provides new and enhanced Common Avionics equipment to comply with increasing ICAO (International Civil Aviation Organization) Standards and mandates. Areas impacted are worldwide, including transoceanic routes, as well as European and US National Air Space. Aircraft which are non-compliant with these standards and country mandates will be operationally delayed, circuitously rerouted, or denied access to controlled airspace. Some requirements are already in place (i.e. 8.33KHz VHF radio channels in Europe, Oct 99), while others are scheduled for implementation throughout the next several years (i.e.: RNP-4, 2003 to 2005).																			
Prioritization of platform type and quantity is based on mission and anticipated operation in affected airspace. Enhanced equipment includes Mode S, 8.33KHz VHF channel spacing, RNP-4 integrity, Protected Instrument Landing System (P-ILS), Multi-Mode Receiver, and cockpit processing and display capability. FY01 Initiated an interim subprogram to provide near term capability to meet European mandates of 1 January 2001 for P-ILS via new start notification letter to Congress.																			
DEVELOPMENT STATUS/MAJOR DEVELOPMENT MILESTONES:																			
Begin Mode S integration into P-3C in 04. Achieve IOC by 07																			
Begin RNP-4 integration into EA-6B by 05. Achieve IOC by 07																			
Begin Integration of 8.33 KHz VHF Radio into P-3C by 05. Achieve IOC by 2007																			
FINANCIAL PLAN: (TOA, \$ in Millions)																			
	Prior Years	FY 2003		FY 2004		FY 2005		FY 2006		FY 2007		FY 2008		FY2009		To Complete		Total	
	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	
RDT&E																			
PROCUREMENT																			
Installation Kits																			
CNS/ATM Kit							25	2.1											
Installation Kits N/R					7.0		20.9												
Installation Equipment																			
CNS/ATM Equip							25	7.1											
CNS/ATM P-ILS	132	0.7			278	1.5	327	1.9											
Installation Equipment N/R						0.8		2.4											
Engineering Change Orders						0.2		0.9											
Data						0.1		0.5											
Training Equipment								4.8											
Support Equipment							*	0.4											
ILS						1.6		2.8											
Other Support		0.2		0.6		11.5		26.8											
Interim Contractor Support																			
Installation Cost							4	*											
<b>Total Procurement</b>		<b>0.8</b>		<b>0.6</b>		<b>22.8</b>		<b>70.7</b>											

Notes:

- Totals may not add due to rounding
- Asterisk indicates amount less than \$50K
- A-Kits, B-Kits, and Installation cost varies due to multiple & different functionalities/systems on each aircraft T/M/S
- B-Kits quantities differ from A-Kits where B-Kits consists of a card or module that will be integrated without A-Kit requirement.

Exhibit P-3a

MODELS OF SYSTEMS AFFECTED: P-3C, EP-3E, C/KC-130, C-2A, EA-6B, KC130J, VH-3D, VH-60N, F/A-18E/F, F/A-18C/D E-2C, MH-60S, MH-60R, F/A-18A+, H-1, CH-53E, AV-8B, TAV-8B,UP/VP-3A, NP-3C/D, MV-22B, MH-53E MODIFICATION TITLE: CNS/ATM (OSIP 21-01)

INSTALLATION INFORMATION:

METHOD OF IMPLEMENTATION: USN Field Modification Team

ADMINISTRATIVE LEADTIME: 4 Months PRODUCTION LEADTIME: 12 Months

CONTRACT DATES: FY 2003: \_\_\_\_\_ FY 2004: \_\_\_\_\_ FY 2005: Feb-05

DELIVERY DATE: FY 2003: \_\_\_\_\_ FY 2004: \_\_\_\_\_ FY 2005: Jan-06

(\$ in Millions)

Cost:	Prior Years		FY 2003		FY 2004		FY 2005		FY 2006		FY 2007		FY 2008		FY 2009		To Complete		TOTAL		
	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	
FY 2002 & PY ( ) kits																					
FY 2003 ( ) kits																					
FY 2004 ( ) kits																					
FY 2005 ( ) kits							4	*													
FY 2006 ( ) kits																					
FY 2007 ( ) kits																					
FY 2008 ( ) kits																					
FY 2009 ( ) kits																					
To Complete ( ) kits																					
TOTAL							4	*													

\*\*Note: E-2C GNS-350 COTS item; no production lead time.

Installation Schedule

FY 2002 & Prior	FY 2003				FY 2004				FY 2005				FY 2006				FY 2007				
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	
In									1	1	2										
Out									1	1	2										

	FY 2008				FY 2009				To Complete	Total
	1	2	3	4	1	2	3	4		
In										
Out										

Exhibit P-3a Individual Modification

MODIFICATION TITLE: Tactical Aircraft Moving Map Capability (TAMMAC) (OSIP 02-02)

MODELS OF SYSTEMS AFFECTED: F/A-18C/D/E/F, AV-8B TYPE MODIFICATION: Common Avionics Modification

DESCRIPTION/JUSTIFICATION:TAMMAC provides the aircrew an easily assimilated graphical presentation of the aircraft's position and the relative positions of targets, threats, terrain features, planned mission flight path, no fly zones, safe bases and other objects. TAMMAC will present the aircraft's current situation on a map using new or existing cockpit displays. In addition to providing a basic moving map capability, the TAMMAC system will serve as a memory resource for the overall aircraft mission system and will incorporate an improved data transfer and recording capability. This memory resource includes a data loader function of sufficient memory capacity and speed to load/update all required map theater and mission specific databases as well as the ability to record mission and maintenance data. TAMMAC will also provide a Terrain Awareness Warning System (TAWS) capability. The principle benefits anticipated, increased mission effectiveness and survivability, arise from improved situation awareness, reduced crew workload and enhanced capability for precision navigation, targeting, terrain avoidance, and mission replanning. TAMMAC is comprised of two Weapon Replaceable Assemblies (WRA), the Advanced Memory Unit (AMU) and the Digital Map Computer (DMC). The Digital Video Map Computer (DVMC) , a DMC variant, will be utilized for Lot 26 and above F/A-18E/F aircraft . The TAMMAC system will replace the existing Navy AN/ASQ-196 Digital Map Set in the older aircraft, which is facing major parts obsolescence problems and is not capable of growing to support future requirements. TAMMAC will also replace the AN/ASQ-194 Data Storage Set which has insufficient memory and loading speed to load map theater databases. DVMCs are procured to replace F/A-18E/F DMCs installed in Lot 26 and 27. The DMC will be reused in the C/D retrofit program.

DEVELOPMENT STATUS/MAJOR DEVELOPMENT MILESTONES:  
Milestone III approved April 01.

FINANCIAL PLAN: (TOA, \$ in Millions)

	Prior Years		FY 2003		FY 2004		FY 2005		FY 2006		FY 2007		FY 2008		FY2009		To Complete		Total		
	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	
RDT&E																					
PROCUREMENT																					
Installation Kits																					
TAMMAC Kit					110	0.2	112	0.3													
Installation Kits N/R																					
Installation Equipment																					
TAMMAC Equip	8	0.5			195	10.8	156	9.9													
Installation Equipment N/R		0.3		1.0		0.3		1.0													
Engineering Change Orders						1.9		0.1													
Data		0.2		0.7		0.2		0.1													
Training Equipment						0.1		0.1													
Support Equipment				0.3	84	1.8	78	0.5													
ILS				0.6		0.1		0.4													
Other Support		0.9		2.0		1.7		1.5													
Interim Contractor Support																					
Installation Cost							110	1.2													
<b>Total Procurement</b>		<b>1.9</b>		<b>4.5</b>		<b>17.2</b>		<b>15.0</b>													

Notes:

- Totals may not add due to rounding
- Asterisk indicates amount less than \$50K
- Difference in A and B kits reflect procurements of AMU only and DVMC retrofits - no A kit required.
- F/A-18 OSIP # 16-01 reflects 29 AMU only procurements in FY01.

Exhibit P-3a

MODELS OF SYSTEMS AFFECTED: F/A-18C/D/E/F, AV-8B MODIFICATION TITLE: Tactical Aircraft Moving Map Capability (TAMMAC) (OSIP 02-02)

INSTALLATION INFORMATION:

METHOD OF IMPLEMENTATION: USN Field Modification Team

ADMINISTRATIVE LEADTIME: 4 Months PRODUCTION LEADTIME: 12 Months

CONTRACT DATES: FY 2003: \_\_\_\_\_ FY 2004: Jan-04 FY 2005: Jan-05

DELIVERY DATE: FY 2003: \_\_\_\_\_ FY 2004: Dec-04 FY 2005: Dec-05

(\$ in Millions)

Cost:	Prior Years		FY 2003		FY 2004		FY 2005		FY 2006		FY 2007		FY 2008		FY 2009		To Complete		TOTAL		
	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	
FY 2002 & PY ( ) kits																					
FY 2003 ( ) kits																					
FY 2004 ( ) kits							110	1.2													
FY 2005 ( ) kits																					
FY 2006 ( ) kits																					
FY 2007 ( ) kits																					
FY 2008 ( ) kits																					
FY 2009 ( ) kits																					
To Complete ( ) kits																					
<b>TOTAL</b>							<b>110</b>	<b>1.2</b>													

Installation Schedule

FY 2002 & Prior	FY 2003				FY 2004				FY 2005				FY 2006				FY 2007				
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	
In												35	37	38							
Out												35	37	38							

	FY 2008				FY 2009				To Complete	Total
	1	2	3	4	1	2	3	4		
In										
Out										

Exhibit P-3a Individual Modification

MODIFICATION TITLE: Advanced Mission Computer & Displays (AMC&D)/ Multipurpose Color Display (MPCD) (OSIP 01-02)

MODELS OF SYSTEMS AFFECTED: F/A-18C/D/E/F, AV-8B, T-45 TYPE MODIFICATION: Common Avionics Modification

**DESCRIPTION/JUSTIFICATION:**

Advanced Mission Computer and Displays(AMC&D) System is targeted to replace existing aging/obsolete and performance limited AN/AYK-14(V) Mission Computer (MC) and Contractor Furnished Equipment Displays. AMC&D system consists of an Advanced Mission Computer (AMC) which includes Mission Processing and Display Processing, Display Heads (DH), High-Speed Data Bus interfaces with Fibre Channel Network Switches (FCNS) and an 8x10 display. AMC&D system will have modular components integrated on an Open Systems Architecture so that it can be tailored and configured for each application, and can address new performance requirements and technologies with minimum cost. AMC&D will provide improved mission computers and displays to handle increased requirement for flight, mission, and imagery data. Due to obsolescence problems with the current Multipurpose Color Display (MPCD) display, the AMC&D program is leveraging the 5x5 DH to provide a form, fit, function and interface replacement (no install funding required). MPCD production buys begin in FY02 and AMC&D LRIP production buys began in FY01 with FRP buys planned in FY04. The F/A-18E/F Retrofit Program goal is to achieve a 2-block configuration. Block 1 aircraft include Lots 21-25 and Block 2 includes Lots 26 and above. Block 1 will consist of replacing the AN/AYK-14 computers in Lots 21-24 and replacing the AMC with a newer configuration AMC in Lot 25. The computers are obtained as part of a reuse program from Block 2 portion of the upgrade and all Lots will require an A-kit. Lots 26 and 27 of Block 2 are provisioned to accept all WRAs for Block 2. The 06 procurement for Lots 26 consists of FCNS, displays and digital video mapping card. The 06 procurement for Lot 27 consists of displays, DVMC, and upgrade to a card in the AMC. To maintain the common block configuration, new AMCs are procured for both Lots in the outyears. The AMCs removed from Lots 26 and 27 will be part of the reuse to the Block 1 configuration. The AMCs procured for Lot 28 and 29 do not require installation costs since they are a form fit function replacement for as-delivered AMCs. The systems removed from Lots 28 and 29 will be part of the reuse process. AMC&D MNS - M061-88-94 of 2 December 1994. AMC&D ORD Ser. No. 549-88-00 Approved 21 March 2000.

**DEVELOPMENT STATUS/MAJOR DEVELOPMENT MILESTONES:**

AMC and 5x5 display CDR - 2nd Qtr FY01. FCNS CDR - 4th Qtr FY01, 8x10 CDR - 2nd Qtr FY02.  
 F/A-18E/F: OPEVAL - 2nd Qtr FY03, Milestone III - 3rd Qtr FY04, OA - 3rd Qtr FY02, FOT&E 2nd Qtr FY04.  
 AV-8B DT-IIB-2 - 4th Qtr FY01, OPEVAL - 4th Qtr FY02, Milestone III - 2nd Qtr FY03.

**FINANCIAL PLAN: (TOA, \$ in Millions)**

	Prior Years		FY 2003		FY 2004		FY 2005		FY 2006		FY 2007		FY 2008		FY 2009		To Complete		Total		
	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	
RDT&E																					
PROCUREMENT																					
Installation Kits																					
AMC&D / MPCD Kit																					
Installation Kits N/R																					
Installation Equipment																					
AMC&D / MPCD Equip	70	11.6	55.0	4.7	83	11.3	76	9.4													
Installation Equipment N/R				6.9		17.6		9.5													
Engineering Change Orders																					
Data		0.4		0.3																	
Training Equipment		0.4				1.1		0.6													
Support Equipment																					
ILS		1.2		0.8		2.1		1.2													
Other Support		4.6		4.3		3.0		2.6													
Interim Contractor Support																					
Installation Cost																					
<b>Total Procurement</b>		<b>18.1</b>		<b>17.0</b>		<b>35.1</b>		<b>23.4</b>													

**Notes:**

1. Totals may not add due to rounding
2. Asterisk indicates amount less than \$50K
3. MPCD is a drop-in-replacement. No A-kit required.
4. B-Kit (WRA) procured in outyears are necessary to meet common block configuration.
5. See Install footnote for further clarification.

Exhibit P-3a

MODELS OF SYSTEMS AFFECTED: F/A-18C/D/E/F, AV-8B, T-45 MODIFICATION TITLE: Advanced Mission Computer & Displays (AMC&D)/ Multipurpose Color Display (MPCD) (OSIP 01-02)

INSTALLATION INFORMATION:

METHOD OF IMPLEMENTATION: Prime Contractor

ADMINISTRATIVE LEADTIME: 2 Months PRODUCTION LEADTIME: 15 Months

CONTRACT DATES: FY 2003: \_\_\_\_\_ FY 2006: Jun-06 + FY 2007: Dec-07

DELIVERY DATE: FY 2003: \_\_\_\_\_ FY 2006: Sep-07 FY 2007: Mar-09

+Awaiting MS III Decision

(\$ in Millions)

Cost:	Prior Years		FY 2003		FY 2004		FY 2005		FY 2006		FY 2007		FY 2008		FY 2009		To Complete		TOTAL		
	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	
FY 2002 & PY ( ) kits																					
FY 2003 ( ) kits																					
FY 2004 ( ) kits																					
FY 2005 ( ) kits																					
FY 2006 ( ) kits																					
FY 2007 ( ) kits																					
FY 2008 ( ) kits																					
FY 2009 ( ) kits																					
To Complete ( ) kits																					
TOTAL																					

Installation Schedule

	FY 2002	FY 2003				FY 2004				FY 2005				FY 2006				FY 2007				
	& Prior	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	
In																						
Out																						

	FY 2008				FY 2009				To Complete	Total
	1	2	3	4	1	2	3	4		
In										
Out										

\* A-Kits, B-Kits and Installs do not align. A or B-Kits which require installation are shown.

\*\* F/A-18 has 15-month lead time.

\*\*\* T-45 has 12-month lead time.

Note 1:

F/A-18E/F Installation Equipment per Lot that have cost

Lot	Year of Procurement	Description	Year of Installation
Lot 21	2011	12 A-Kits/ 12 B-Kits (AMPD)	2012 (12 month lead time for A- kit)
Lot 22	2011	20 A-Kits/20 B-Kits (AMPD)	2012 (12 month lead time for A- kit)
Lot 23	2011	30 A-Kits/ 30 B-Kits (AMPD)	2012 (12 month lead time for A- kit)
Lot 24	2010/2011	36 A-Kits/ 36 B-Kits (AMPD)	2011/2012 (12 month lead time for A- kit)
Lot 25	2008/2009	39 A-Kits	2009/2010 (12 month lead time for A-kit). Lot 25 a/c will not require as extensive an A kit because if already has AMC
Lot 26	2006/2010-2012	B-Kits only (2006- 96 FCNS, 19 8x10 displays, 48 DVMC) (2009/2010-2012 AMC)	2008 (15 month lead time) A-kit previously provisioned. AMC in 2011-2013 is remove/replace - no install \$ needed
Lot 27	2006/2009/2010	B-Kits only (2006 - 21 8x10 displays, 44 DVMCs, 84 V1 IPM Cards) (2008/2009-2010 AMC)	2008 (15 month lead time) A-kit previously provisioned. AMC in 2010/2011 is remove/replace - no install \$ needed
Lot 28	2008/2009	B-Kits only - AMCs (no installation costs)	2009/2010
Lot 29	06/2007/2008	B-Kits only - AMCs (no installation cost)	2007/2008/2009

Exhibit P-3a Individual Modification

MODIFICATION TITLE: Attitude Gyro Upgrade (OSIP 07-04)

MODELS OF SYSTEMS AFFECTED: CH-53E, MH-53E, CH-60S, OP-3C, HH-60H/J, P-3C, H-46, SH-60B/F/H, and MH-60R TYPE MODIFICATION: Common Avionics Modification

DESCRIPTION/JUSTIFICATION:

There are eleven (11) current attitude gyro systems in the CH-53E, MH-53E, CH-60S, EP-3C, HH-60H/J, P-3C, H-46, SH-60B/F/H, and MH-60R aircraft that are significant fleet operational and support cost drivers in the flight hour program. Two state-of-the-art Commercial-off-the-Shelf (COTS) products are available to improve readiness and reduce fleet operational and support costs in the flight hour program. The solution to the problem is to replace these obsolete gyros with a more reliable and, maintainable gyro at the very lowest cost. In order to minimize time and cost for fleet introduction, replacement units shall be COTS in nature and be a form, fit, functional replacement.

DEVELOPMENT STATUS/MAJOR DEVELOPMENT MILESTONES:

COTS/NDI replacement system.

FINANCIAL PLAN: (TOA, \$ in Millions)

	Prior Years		FY 2003		FY 2004		FY 2005		FY 2006		FY 2007		FY 2008		FY2009		To Complete		Total		
	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	
RDT&E																					
PROCUREMENT																					
Installation Kits																					
Attitude Gyro Upgrade Kit																					
Installation Kits N/R																					
Installation Equipment					68	0.8	1,115	9.4													
Attitude Upgrade Equip																					
Installation Equipment N/R						1.4	0.4														
Engineering Change Orders																					
Data						1.0	0.2														
Training Equipment																					
Support Equipment																					
ILS																					
Other Support						1.2	5.0														
Interim Contractor Support																					
Installation Cost																					
<b>Total Procurement</b>						<b>4.4</b>	<b>15.0</b>														

Notes:

1. Totals may not add due to rounding
2. Asterisk indicates amount less than \$50K

Exhibit P-3a Individual Modification

MODIFICATION TITLE: HH-60 AHRS Reliability & Improvement (CREI) (OSIP 08-04)

MODELS OF SYSTEMS AFFECTED: HH-60H TYPE MODIFICATION: Common Avionics Modification

DESCRIPTION/JUSTIFICATION:

The Attitude Heading Reference Systems (AHRS) Reliability Improvement initiative will address reliability, obsolescence and support problems for the HH-60H. The replacement system, A/A24G-51 is a COTS/NDI system which replaces the gyroscope, amplifier and remote compass transmitter. This more reliable, maintainable system is currently fielded in the CH-46E platform.

DEVELOPMENT STATUS/MAJOR DEVELOPMENT MILESTONES:

COTS/NDI replacement system.

FINANCIAL PLAN: (TOA, \$ in Millions)

	Prior Years		FY 2003		FY 2004		FY 2005		FY 2006		FY 2007		FY 2008		FY2009		To Complete		Total		
	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	
RDT&E																					
PROCUREMENT																					
Installation Kits																					
AHRS Kit																					
Installation Kits N/R																					
Installation Equipment																					
AHRS Equip					15	0.6	17	0.6												32	1.2
Installation Equipment N/R						0.3															0.3
Engineering Change Orders																					
Data						0.2															0.2
Training Equipment																					
Support Equipment																					
ILS																					0.0
Other Support																					
Interim Contractor Support																					
Installation Cost																					
<b>Total Procurement</b>						<b>1.0</b>		<b>0.7</b>													<b>1.7</b>

Notes:

1. Totals may not add due to rounding
2. Asterisk indicates amount less than \$50K

Exhibit P-3a Individual Modification

MODIFICATION TITLE: Aircrew Wireless Internal Communications System (AWICS) (OSIP 09-04)

MODELS OF SYSTEMS AFFECTED: MH-53E, CH-46E, HH-60H, CH-53D/E, SH-60B/F, MH-60S/R, KC-130R/T, C-130T, KC-130J, MV-22B, C-2A, UH-3H, SH-3D, P-3 (all TMS), and UH-1 TYPE MODIFICATION: Common Avionics Modification

DESCRIPTION/JUSTIFICATION:

A wireless intercom system that will allow for unimpeded movement throughout the aircraft. This safety improvement will prevent aircrew/passenger entanglement with ICS (intercom system) cords in the event of a mishap.

DEVELOPMENT STATUS/MAJOR DEVELOPMENT MILESTONES: TBD.

FINANCIAL PLAN: (TOA, \$ in Millions)

	Prior Years		FY 2003		FY 2004		FY 2005		FY 2006		FY 2007		FY 2008		FY2009		To Complete		Total		
	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	
RDT&E																					
PROCUREMENT																					
Installation Kits																					
AWICS Kit					15	*	105	0.1													
Installation Kits N/R						0.1	0.2														
Installation Equipment																					
AWICS Equip					15	0.8	105	3.7													
Installation Equipment N/R					8	0.4	5	0.5													
Engineering Change Orders																					
Data						0.3	0.5														
Training Equipment						0.1	0.1														
Support Equipment					2	*	31	0.2													
ILS						0.1	0.3														
Other Support						0.5	1.5														
Interim Contractor Support																					
Installation Cost					15	*	105	0.2													
<b>Total Procurement</b>						<b>2.2</b>	<b>7.3</b>														

Notes:

1. Totals may not add due to rounding
2. Asterisk indicates amount less than \$50K

Exhibit P-3a

MODELS OF SYSTEMS AFFECTED: MH-53E, CH-46E, HH-60H, CH-53D/E, SH-60B/F, MH-60S/R, KC-130R/T, C-130T, KC-130J, MV-22B, C-2A, UH-3H, SH-3D, P-3 (all TMS), and UH-1 MODIFICATION TITLE: Aircrew Wireless Intercom Communications System (AWICS) (OSIP 09-04)

INSTALLATION INFORMATION:

METHOD OF IMPLEMENTATION: Contractor or USN Field Modification Team

ADMINISTRATIVE LEADTIME: 5 Months PRODUCTION LEADTIME: 1 Months

CONTRACT DATES: FY 2003: \_\_\_\_\_ FY 2004: Jul-04 (LRIP) FY 2005: Mar-05

DELIVERY DATE: FY 2003: \_\_\_\_\_ FY 2004: Aug-04 FY 2005: Apr-05

(\$ in Millions)

Cost:	Prior Years		FY 2003		FY 2004		FY 2005		FY 2006		FY 2007		FY 2008		FY 2009		To Complete		TOTAL		
	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	
FY 2002 & PY ( ) kits																					
FY 2003 ( ) kits																					
FY 2004 ( ) kits					15	*															
FY 2005 ( ) kits							105	0.2													
FY 2006 ( ) kits																					
FY 2007 ( ) kits																					
FY 2008 ( ) kits																					
FY 2009 ( ) kits																					
To Complete ( ) kits																					
TOTAL					15	*	105	0.2													

Installation Schedule

	FY 2002 & Prior	FY 2003				FY 2004				FY 2005				FY 2006				FY 2007				
		1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	
In									15			52	53									
Out								15			52	53										

	FY 2008				FY 2009				To Complete	Total
	1	2	3	4	1	2	3	4		
In										
Out										

<b>CLASSIFICATION: UNCLASSIFIED</b>												
<b>Exhibit P-40, BUDGET ITEM JUSTIFICATION</b>										DATE: <b>February 2004</b>		
APPROPRIATION/BUDGET ACTIVITY <b>Aircraft Procurement, Navy/APN-5 Aircraft Modifications</b>							P-1 ITEM NOMENCLATURE <b>ID SYSTEMS</b>					
Program Element for Code B Items: <b>BLI 058200</b>							Other Related Program Elements					
	Prior Years	ID Code		FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	To Complete	Total
QTY		A										
COST (In Millions)		A			1.8	1.6	7.3	11.4	11.6	11.9	300.8	346.4
<p>DESCRIPTION/JUSTIFICATION:                      MK XIIA Mode 5 provides improved secure cooperative combat identification throughout Identification Friend or Foe (IFF). MODE 5 is a product improvement which is designed to be installed throughout engineering changes to digital MK XII interrogators and transponders including the APX-117, APX-118, UPX-37, APX-111, and RT-1832. MODE 5 is designed to be installed in all Navy T/M/S aircraft which are currently MODE 4 IFF capable (49 T/M/S aircraft). MODE 5 is developed in cooperation with NATO and is governed by STANAG 4193. MODE 5 was designated a "JROC special interest" program in March 2001 and is interoperable across all services. ORD # 577-06-01. FY05 funding will be used to begin Mode 5 Engineering Change Proposal (ECP) non-recurring intergration efforts for production aircraft.</p> <p>FY03 funding for this OSIP resides in BLI 052500 under OSIP number 15-03.</p>												
(TOA, \$ in Millions)												
<b>OSIP No.</b>	<b>Description</b>	<b>Prior Years</b>		<b>FY 2003</b>	<b>FY 2004</b>	<b>FY 2005</b>	<b>FY 2006</b>	<b>FY 2007</b>	<b>FY 2008</b>	<b>FY 2009</b>	<b>To Complete</b>	<b>Total</b>
15-03	MARK XIIIA Mode 5 IFF			1.8	1.6	7.3	11.4	11.6	11.9	300.8	346.4	
<b>Total</b>				<b>1.8</b>	<b>1.6</b>	<b>7.3</b>	<b>11.4</b>	<b>11.6</b>	<b>11.9</b>	<b>300.8</b>	<b>346.4</b>	
<b>Note: Totals may not add due to rounding.</b>												

Exhibit P-3a Individual Modification

MODIFICATION TITLE: MARK XIIA MODE 5 IFF OSIP (15-03)

MODELS OF SYSTEMS AFFECTED: VARIOUS (49 Separate T/M/S) TYPE MODIFICATION: CAPABILITY IMPROVEMENT

DESCRIPTION/JUSTIFICATION: MK XIIA Mode 5 provides improved secure cooperative combat identification throughout IFF. MODE 5 is a product improvement which is designed to be installed throughout engineering changes to digital MK XII interrogators and transponders including the APX-117, APX-118, UPX-37, APX-111, and RT-1832. MODE 5 is designed to be installed in all Navy T/M/S aircraft which are currently MODE 4 IFF capable (49 T/M/S aircraft). MODE 5 is developed in cooperation with NATO and is governed by STANAG 4193. MODE 5 was designated a "JROC special interest" program in March 2001 and is interoperable across all services. ORD # 577-06-01

DEVELOPMENT STATUS/MAJOR DEVELOPMENT MILESTONES: MODE 5 completed a brassboard development in December 1997. Modeling and Simulation to demonstrate interoperability was completed in February of 1998 to support NATO STANAG development. Proof of concept flight testing completed in December 1999. A Preliminary Design Review (PDR) for the proposed ICP to incorporate MODE 5 in the APX-118 was completed in July 2001. Contracts to develop a prototype Cryptographic Module and ECP kit are presently being executed. Milestone B was completed in May 2003. Prototype development will occur from April 2003 thru April 2004. Installation Kits Non-recurring begins integration with host platforms in June 2003. Milestone C is scheduled for September 2005.

FINANCIAL PLAN: (TOA, \$ in Millions)

	Prior Years		FY 2003		FY 2004		FY 2005		FY 2006		FY 2007		FY 2008		FY2009		To Complete		Total		
	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	
RDT&E		9.9		11.3		10.5		5.7													
PROCUREMENT																					
Installation Kits																					
PLATFORM Installation A-Kits																					
Installation Kits N/R						1.2		1.1													
Installation Equipment																					
MODE 5 IFF HARDWARE B-KIT																					
Installation Equipment N/R								0.4													
Engineering Change Orders																					
Data																					
Training Equipment							*	*													
Support Equipment						0.6															
ILS																					
Other Support																					
Interim Contractor Support																					
Installation Cost																					
<b>Total Procurement</b>						<b>1.8</b>		<b>1.6</b>													

Notes:

1. Totals may not add due to rounding
2. Asterisk indicates amount less than \$50K

Exhibit P-3a

MODELS OF SYSTEMS AFFECTED: VARIOUS (49 Separate T/M/S) MODIFICATION TITLE: MARK XIIA MODE 5 IFF OSIP (15-03)

INSTALLATION INFORMATION:

METHOD OF IMPLEMENTATION: FIELD INSTALL KITS and VENDOR DEPOT ECP INSTALLATION

ADMINISTRATIVE LEADTIME: \_\_\_\_\_ PRODUCTION LEADTIME: \_\_\_\_\_

CONTRACT DATES: FY 2003: \_\_\_\_\_ FY 2004: \_\_\_\_\_ FY 2005: \_\_\_\_\_

DELIVERY DATE: FY 2003: \_\_\_\_\_ FY 2004: \_\_\_\_\_ FY 2005: \_\_\_\_\_

(\$ in Millions)

Cost:	Prior Years		FY 2003		FY 2004		FY 2005		FY 2006		FY 2007		FY 2008		FY 2009		To Complete		TOTAL		
	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	
FY 2002 & PY ( ) kits																					
FY 2003 ( ) kits																					
FY 2004 ( ) kits																					
FY 2005 ( ) kits																					
FY 2006 ( ) kits																					
FY 2007 ( ) kits																					
FY 2008 ( ) kits																					
FY 2009 ( ) kits																					
To Complete ( ) kits																					
TOTAL																					

Installation Schedule

FY 2002 & Prior	FY 2003				FY 2004				FY 2005				FY 2006				FY 2007				
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	
In																					
Out																					

	FY 2008				FY 2009				To Complete	Total
	1	2	3	4	1	2	3	4		
In										
Out										

Exhibit P-40, BUDGET ITEM JUSTIFICATION							DATE: <b>FEBRUARY 2004</b>					
APPROPRIATION/BUDGET ACTIVITY <b>Aircraft Procurement, Navy/APN-5 Aircraft Modifications</b>							P-1 ITEM NOMENCLATURE <b>MV-22 MODIFICATION</b>					
Program Element for Code B Items:							Other Related Program Elements					
	Prior Years	ID Code		FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	To Complete	Total
QTY		A										
COST (In Millions)	52.0	A		4.0	4.8	3.4	19.1	23.9	24.4	24.9	378.8	535.4
<p>The V-22 is a tilt-rotor, vertical takeoff and landing aircraft currently being developed for joint service application. The program is being designed to provide an aircraft to meet the amphibious/vertical assault needs of the Marine Corps, the strike rescue needs of the Navy, and supplement USSOCOM special mission aircraft. The aircraft will be capable of flying 2,100 miles with one refueling, giving the Services the advantage of a Vertical/Short Takeoff and Landing (V/STOL) aircraft the could rapidly self-deploy to any location in the world.</p> <p>The FY 2004 budget request reflects the funding level necessary to correct currently known deficiencies and allow the program to move forward. The FY 2004 modifications program procures retrofit kits necessary to correct discrepancies identified during initial flight testing as well as those resulting from any redesign efforts.</p> <p>The current procurement objective is 458. 360 MV-22 Marine Corps aircraft (includes one Maintenance Trainer), 50 CV-22 aircraft for USSOCOM (funded by USSOCOM and the Air Force) and 48 HV-22 Navy aircraft. A total of 10 V-22 aircraft have been delivered. FY-01 and FY-02 is the retrofit procurement associated with the current available (8) aircraft, (3) simulator(s) and (1) aircraft maintenance trainer. FY-06 begins the procurement of retrofit kits for additional outyear delivered aircraft.</p> <p>Type Modifications: Safety, Reliability, Increased Service Life, Improved Mission Capabilities</p>												
(TOA, \$ in Millions)												
OSIP No.	Description	Prior Years		FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	To Complete	Total
22-01	MV-22 Correction of Deficiencies and Pre Block A through C	52.0		4.0	4.8	3.4	19.1	23.9	24.4	24.9	378.8	535.4
	<b>Total</b>	52.0		4.0	4.8	3.4	19.1	23.9	24.4	24.9	378.8	535.4
<b>Note: Totals may not add due to rounding.</b>												

Exhibit P-3a	Individual Modification	FEBRUARY 2004
MODIFICATION TITLE:	<b>V-22 CORRECTIONS OF DEFICIENCIES AND PRE BLOCK A THROUGH C</b>	
MODELS OF SYSTEMS AFFECTED:	<b>MV-22</b>	TYPE MODIFICATION: SAFETY, RELIABILITY, INCREASED SERVICE LIFE, IMPROVED MISSION CAPABILITY
DESCRIPTION/JUSTIFICATION:		
<b>ECP-344:</b>		
REGULATED CONVERTER: Incorporates fixes to alleviate concerns associated with spec compliance and eliminate nuisance failures for fleet aircraft.		
SHAFT DRIVEN COMPRESSOR SCREEN: Incorporates a new shaft drive compressor screen with one piece inner and outer frames to reduce the number of parts and larger holes to increase air flow.		
RAMP ACTUATOR: Incorporates fixes for reliability and life limit deficiencies. There are two ramp actuators per aircraft.		
CARGO RESTRAINT SYSTEM: Changes the cargo restraint factors from a dynamic to a static tie down system to improve Fleet suitability.		
FUEL ISOLATION TUBES: Incorporates the productionized final design for resistive tubes on hoses for lightning strike protection.		
AVIONICS: Avionics modifications to the V-22 will improve display reliability, eliminate communication security issues and alleviate parts obsolescence/vendor problems. Changes to the V-22 avionics will include: Display System upgrade, Cockpit Inter Communication System modification, upgraded Mission Computer, updated Data Transfer Module, Control Display Unit/Engine Instrument Caution Advisory System upgrade, Control Display Unit Keyboard upgrad, and Avionics Interface Units upgrades.		
POWER TRANSMISSION AND CONTROL: Changes to the V-22 Power Transmission and Control System will improve reliability and maintainability. Changes to the V-22 Power Transmission and Control System will include: swashplate reliability upgrades, engine gimbal ring/spherical bearing installation revision, updated refuel/defuel valve, bull gear shroud and engine gimbal ring.		
COCKPIT: Changes to the V-22 cockpit will improve crew safety, mission suitability and overall reliability. Changes to the V-22 cockpit include: night vision goggle compatible hardware, upgraded inertial reels, upgraded pilot and co-pilot restraint system, throttle control lever soft stop modification, and improved rain removal.		
STRUCTURAL: Structural changes to the V-22 will increase survivability, improve maintainability and aircraft availability, eliminate component interferences, improve suitability and correct safety related issues. Structural changes include: forward sponson fuel bladder access redesign/install powder panels, environmental control unit Ram air barrier filter, avionics left hand mounting tray, aft upper door strut, add manual drive decal, fold blades in high winds and modified trunnion fitting.		
PRODUCTION ROTOR LIGHTING PROTECTION: Improves rotor system lighting protection by adding improved bonding harness and grounding strap bracket.		
BRACKET HYDRAULIC LINE CLAMPING: Relocate clamping provisions from the removable conversion actuator fairing to the frame and improve the tube installation.		
SWASHPLATE DRAG TUBE: Redesign Swashplate Drag Tube to increase part life.		
WASHER: Washer to now be included with attach hardware to ensure adequate tying of the assembly.		
RELIABILITY & MAINTAINABILITY FIXES: Includes Corrective Action Plans to make the aircraft compliant with Operation Requirements Document requirements.		
<b>ECP-400:</b>		
<b>AIRCRAFT MAINTENANCE TRAINER:</b> Improves training and pilot proficiency by incorporating modifications to the AMT to reflect most current aircraft configuration as directed by Blue Ribbon Panel.		
<b>ECP-397:</b>		
<b>FULL FIDELITY SIMULATOR (FFS) UPGRADES:</b> Improves training and pilot proficiency by incorporating modifications to the FFS #1 & #2 to reflect most current aircraft configuration as directed by Blue Ribbon Panel.		
<b>FLIGHT TRAINING DEVICE (FTD) UPGRADES:</b> Improves training and pilot proficiency by incorporating modifications to the FTD #1 to reflect most current aircraft configuration as directed by Blue Ribbon Panel.		
<b>ECP-427R1:</b>		
<b>MECHANICAL PART TASK TRAINER:</b> Improves maintainer and aircrew proficiency by incorporating Block 'A' configuration changes.		
<b>Future Block ECP:</b>		
<b>PRE BLOCK A through BLOCK C:</b> Major configuration changes include: Nacelle changes, Avionics, Blade Fold Harness, Fuel Probe, Active Vibration Suppression System, Constant Frequency Generator and Variable Frequency Generator. Additional configuration changes include Effectiveness and Suitability and Enhanced Capability.		
<b>DEVELOPMENT STATUS/MAJOR DEVELOPMENT MILESTONES:</b>		
The MV-22 aircraft are currently in Low Rate Production. First acceptance and incorporation has been in production aircraft. ECP-344/348, ECP-397, and ECP-400 Kit deliveries and Installations are on schedule.		

FINANCIAL PLAN: (TOA, \$ in Millions)

	Prior Years		FY 2003		FY 2004		FY 2005		FY 2006		FY 2007		FY 2008		FY2009		To Complete		Total		
	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	
RDT&E																					
PROCUREMENT																					
Installation Kits																					
ECP V-22-0344																					
CCP10641R2/Display System Upgrade/Flat Panels	8	2.2																			
CCP 10670R1/Implementation of Cockpit Intercorn Mod	8	0.3																			
CCP10703r1/Advanced Mission Computer Post Part Number Roll	8	3.0																			
CCP10716/Swashplate Actuator	8	4.5																			
CCP 10718/Eng Gimbaling Ring Spherical Bearing Instl	4	0.3																			
CCP 40008/Night Vision Goggles Compatibility Rqmt Cockpit Hardware	8	0.2																			
CCP V-22-0161/Shaft Driven Compressor Reliability Improvement	8	0.3																			
CCP V-22-0177R1/Instl Pwdr Panels, Fwd Sponsor Fuel Bladder Access Redesign	8	2.6																			
CCP V-22-0188/Data Transfer Module Proposal	8	0.4																			
CCP V-22-0192R1/Regulated Converter	8	2.0																			
CCP V-22-0206/Inertial Reels	8	0.2																			
CCP V-22-0216/Control Display Unit/Engine Instru. Crew Alerting System Redesign	8	1.0																			
CCP V-22-0217/Shaft Driven Compressor	8	0.1																			
CCP V-22-0224/Avionics Left Hand Mounting Tray	8	0.2																			
CCP V-22-0249/Environmental Control Unit Ram Air Barrier Filter	8	2.6																			
CCP V-22-0279/Update Ramp Actuator - 113	8	1.4																			
CCP V-22-0290/Pilot/Copilot Restraint Sys																					
CCP V-22-0296/Cargo Restraint System																					
CCP V-22-0301/Control Display Unit Keyboard Redesign	8	0.6																			
CCP V-22-0319/Refuel/Defuel Valve	8	0.4																			
CCP V-22-0107/Thrust Control Lever Soft Stop	2	0.1																			
CCP V-22-0138/Alt Upper Door Strut	8	0.1																			
CCP V-22-0147/Rain Removal	6	0.2																			
CCP V-22-0151/Add Manual Drive Decal	4	*																			
CCP V-22-0160/Fold Blades in High Winds																					
CCP V-22-0162/Bull Gear Shroud																					
CCP V-22-0163/Swashplate Gimbal Ring	8	0.6																			
CCP V-22-0208/Fuel Isolation Tubes	8	0.3																			
CCP 10692/Trunnion	8	0.8																			
CCP-TBD Reliability and Maintainability Changes																					
CCP TBD NACELLE Safety Improvements																					
ECP V-22-0348/Interface Units	8	0.3																			
Pre Block A to B																					
Block A to C																					
Block B to C																					
Installation Kits N/R		3.5																			
Installation Equipment																					
XXX Equip																					
Installation Equipment N/R		0.6																			
Engineering Change Orders																					
XXX Kit ECO XXX																					
XXX Equip ECO XXX																					
Data		0.2																			
Training Equipment	4	20.9		3.7	2	4.3	2	3.3													
Support Equipment																					
ILS		1.0																			
Other Support																					
Interim Contractor Support																					
Installation Cost	1	1.2	1	0.4		0.5	2	0.2													
<b>Total Procurement</b>		<b>52.0</b>		<b>4.0</b>		<b>4.8</b>		<b>3.4</b>													

Notes:  
 1. Totals may not add due to rounding  
 2. Asterisk indicates amount less than \$50K

