

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
Total			0.5	6.3	7.4	9.9	25.4	24.8	16.0	21.7	112.1

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												
Total Procurement				0.5		6.3		4.9													

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													
Total Procurement								2.5													

Notes:

1. Totals may not add due to rounding
2. JCAD installation equipment will be procured and provided by the CBDP at no cost.
3. 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																					
TOTAL							2	0.1													

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										