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BUDGET ITEM JUSTIFICATION SHEET P-40							DATE: FEBRUARY 2004					
APPROPRIATION/BUDGET ACTIVITY OTHER PROCUREMENT, NAVY BA1 Ships Support Equipment Program Element for Code B Items:							P-1 ITEM NOMENCLATURE LM2500 GAS TURBINE (81GA) (0110) Other Related Program Elements					
	Prior Years	ID Code	FY	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	To Complete	Total
QUANTITY												
COST	\$32.3			\$9.0	\$10.6	\$9.0	\$8.7	\$8.4	\$8.5	\$8.7		\$95.2
SPARES COST (In Millions)												\$0.0
<p>The LM2500 Marine Gas Turbine and its associated Engineering Control Systems provide main propulsion for the Navy's newest surface combatants including the FFG 7 OLIVER HAZARD PERRY Class, DD 963 SPRUANCE Class, CG 47 TICONDEROGA Class, DDG 51 ARLEIGH BURKE Class and AOE 6 SUPPLY Class. The LM2500 is composed of two major subassemblies, the gas generator and power turbine sections. It is coupled to the ship drivetrain by a high speed coupling shaft. The control system provides for both local and remote engine operations. The budget is comprised of the following cost codes:</p> <p style="margin-left: 20px;">Modification Kit Program (GA009)</p> <p style="margin-left: 20px;">a. A metrics program has been established for the LM 2500 engine to track service history for individual engine components and compile data regarding failure rates. The data is compiled for various ship classes and engine configurations. This metrics program clearly identifies where engineering efforts should be focused to improve component reliability and also indicates which modification kits should be procured. The modifications kits can either be installed at the depot level during engine overhauls or at the intermediate level aboard ship via IMA support teams. Following modification kit installations, engine reliability is tracked to measure the effectiveness of these kit installations. Return on investment calculations are employed to quantify program savings. The modification kits hold down the cost to overhaul the engine at the depot level as well as reduce programmatic life cycle costs.</p> <p style="margin-left: 20px;">b. Failure to procure modification kits will prevent improvement to mean time between removal (MTBR) and will significantly increase life cycle costs including increasing the requirement for additional spare engine assets, increasing the cost to overhaul engines at the depot and negatively impacting the reliability of engines and fleet readiness. It should be noted that although some gas turbine ships are decommissioning, the total engine population in the fleet remains stable until FY 2005 and then decreases only by six engines per year. The affects of decommissioning are being offset by an aggressive DDG 51 construction program.</p>												

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BUDGET ITEM JUSTIFICATION SHEET P-40 CONTINUATION		DATE: FEBRUARY 2004
APPROPRIATION/BUDGET ACTIVITY BA1 Ships Support Equipment OTHER PROCUREMENT, NAVY	P-1 ITEM NOMENCLATURE LM2500 GAS TURBINE (81GA) (0110)	
<p>Gas Generator In Container (GA010)</p> <p>a. The attainment of LM2500 spare single shank gas generator inventory level of 26 is considered the program's minimum requirement based upon the current total population of 448 engines along with the requirement to forward deploy some inventory assets to support the fleet overseas. This inventory level is based upon 25 years of experience with the LM2500 Engine and ensures 90% probability for spare asset availability. 15 complete gas generator units have been procured through FY 2001. In FY 2002, several one time components were procured to start a rotatable pool of high failure items. One complete gas generator unit will be procured each year, FY 2003 to 2005 (three units) One complete gas generator unit will be procured each subsequent year (FY 2006-13).</p> <p>Control System Modifications (GA012)</p> <p>a. The engine control system consists of sensors, data acquisition units, processors and operator consoles. Peripheral devices include bell and data loggers, printers, tape readers, mass storage devices and tape recorders. These end items are comprised of printer circuit boards, meters, CRT's, switches and power supplies. Inventory objectives not required. Unit costs vary per modification kit.</p> <p>Special Support Equipment, SSE (GA014)</p> <p>a. Procurement of Special Support Equipment allows for increased depot repair capability, thereby stabilizing or reducing the cost to overhaul engines at the depot. This tooling is generally associated with depot modifications being made to the engine to increase engine reliability. This increased capability reduces engine overhaul costs.</p> <p>Full Authority Digital Electronic Control (FADEC) (GA015)</p> <p>a. Funding will procure one DDG-51 shipset each year to replace existing on engine fuel controls with off engine digital fuel controls. This addresses an obsolescence, maintainability, and reliability issue. One shipset will be procured in each year, FY 2003 thru FY 2005 (Three shipsets). One shipset will be procured in each year, FY2006 thru FY2009 (4 shipsets) .</p> <p>Production Engineering (GA830)</p> <p>a. The review and approval of any production contract technical documentation, or the separate development of this documentation to include Technical Manuals, Signal Flow Diagrams, PMS, Level III production drawings, provisioning technical documentation (PTD), program support data (PSD), allowance parts lists (APL's) and engineering in support of final design reviews.</p>		

P-1 SHOPPING LIST

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WEAPONS SYSTEM COST ANALYSIS P-5	Weapon System	DATE: FEBRUARY 2004
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APPROPRIATION/BUDGET ACTIVITY Other Procurement, Navy BA1 Ships Support Equipment	ID Code	P-1 ITEM NOMENCLATURE/SUBHEAD LM 2500 GAS TURBINE (81GA) (0110)
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COST CODE	ELEMENT OF COST	ID Code	TOTAL COST IN THOUSANDS OF DOLLARS													
			Prior Years	FY		FY 2003			FY 2004			FY 2005				
			Total Cost	Quantity	Unit Cost	Total Cost	Quantity	Unit Cost	Total Cost	Quantity	Unit Cost	Total Cost	Quantity	Unit Cost	Total Cost	
	<u>N76 SURFACE WARFARE</u>		<u>98-02</u>													
GA009	MODIFICATION PROGRAM	A	15,579					2,828			2,867					2,110
GA010	GAS GENERATOR	A	8,762				1	3,062	3,062	1	3,126	3,126	1	3,192		3,192
GA012	ENGINEERING SYSTEM MOD	A	5,699					1,598			2,614					2,238
GA014	SPECIAL SUPPORT EQUIPMENT	A	309					161			637					140
GA015	FADEC	A	0				1	1,000	1,000	1	1,030	1,030	1	1,060		1,060
GA830	PRODUCTION ENGINEERING	A	2,001					377			311					269
GRAND TOTAL			32,350			0		9,026			10,585					9,009

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BUDGET PROCUREMENT HISTORY AND PLANNING EXHIBIT (P-5A)	Weapon System	A. DATE FEBRUARY 2004
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B. APPROPRIATION/BUDGET ACTIVITY Other Procurement, Navy BA 1: Ships Support Equipment	C. P-1 ITEM NOMENCLATURE LM2500 GAS TURBINE (0110)	SUBHEAD 81GA
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Cost Element/ FISCAL YEAR	QUANTITY	UNIT COST (000)	LOCATION OF PCO	RFP ISSUE DATE	CONTRACT METHOD & TYPE	CONTRACTOR AND LOCATION	AWARD DATE	DATE OF FIRST DELIVERY	SPECS AVAILABLE NOW	DATE REVISIONS AVAILABLE
<u>FY 03</u>										
(GA010)	1	3,062	NSWC PHILA, PA		RC/OPT	GE CINCINNATI, OHIO	Mar-03	Jan-04	YES	
(GA015)	1	1,000	NSWC PHILA, PA		RC	GE CINCINNATI, OHIO	Jul-03	May-04	YES	
<u>FY 04</u>										
(GA010)	1	3,126	NSWC PHILA, PA		RC/OPT	GE CINCINNATI, OHIO	Mar-04	Jan-05	YES	
(GA015)	1	1,030	NSWC PHILA, PA		RC	GE CINCINNATI, OHIO	Mar-04	Jan-05	YES	
<u>FY 05</u>										
(GA010)	1	3,192	NSWC PHILA, PA		RC/OPT	GE CINCINNATI, OHIO	Mar-05	Jan-06	YES	
(GA015)	1	1,060	NSWC PHILA, PA		RC	GE CINCINNATI, OHIO	Mar-05	Jan-06	YES	

D. REMARKS
