

INTEGRATED LOGISTIC SUPPORT PLAN (ILSP)
FOR
PRC-2000-MINIATURE/MICROMINIATURE (2M) SYSTEM



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PURPOSE THIS INTEGRATED LOGISTIC SUPPORT PLAN (ILSP) HAS BEEN PREPARED IN ACCORDANCE WITH NAVSEAINST 5000 39 ENCLOSURE (3c) WHICH DETAILS THE ILSP REQUIREMENTS FOR COMMERCIAL EQUIPMENT IT ONLY COVERS THE EQUIPMENT AND SUPPORT FOR THE NAVY PRC-2000-MINIATURE/MICROMINIATURE (2M) SYSTEM

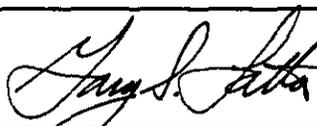
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26J2 COMAFLOATRAGRUMIDPAC Pearl Harbor, HI (N82-2M)
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C28D FTSCCLANT DET Kings Bay, GA (2M)
C28D FTSCCLANT DET Mayport, FL (2M)
C28D FTSCCLANT DET Naples, IT (2M)
C28D FTSCCLANT DET New London, CT (2M)
C31B FTSCPAC DET Everett, WA (2M)
C31B FTSCPAC DET Pearl Harbor, HI (201-2M)
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C4P MCCES Twentynine Palms, CA (CEMS/EFTS/MCAGCC)
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FKA1B COMSPAWARSYSCOM Washington, DC (003-222D,222-2D)
FKA1F COMNAVSUPSYSCOM Washington, DC (N422A,N41)
FKA1G COMNAVSEASYSYSCOM Washington, DC (0417)
FKM14 NAVICP Mechanicsburg, PA (05914)
FKP21 NAVSEALOGCEN Mechanicsburg, PA (4113)
FKP25 AEGIS COMBATSYSCEN Wallops Island, VA
FKR6A NAVAIRWARCENACDIV Indianapolis, IN (3.2.3 C61,3.1.2 C50,1.1.0 C50)
FT1 CNET Pensacola, FL (T23415)
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FOREWORD

This Integrated Logistic Support Plan (ILSP) has been prepared in accordance with NAVSEAINST 5000.39, Enclosure (3c), which details the ILSP requirements for commercial equipment. It only covers the equipment and support for the Navy PRC-2000-Miniature/Microminiature (2M) System.

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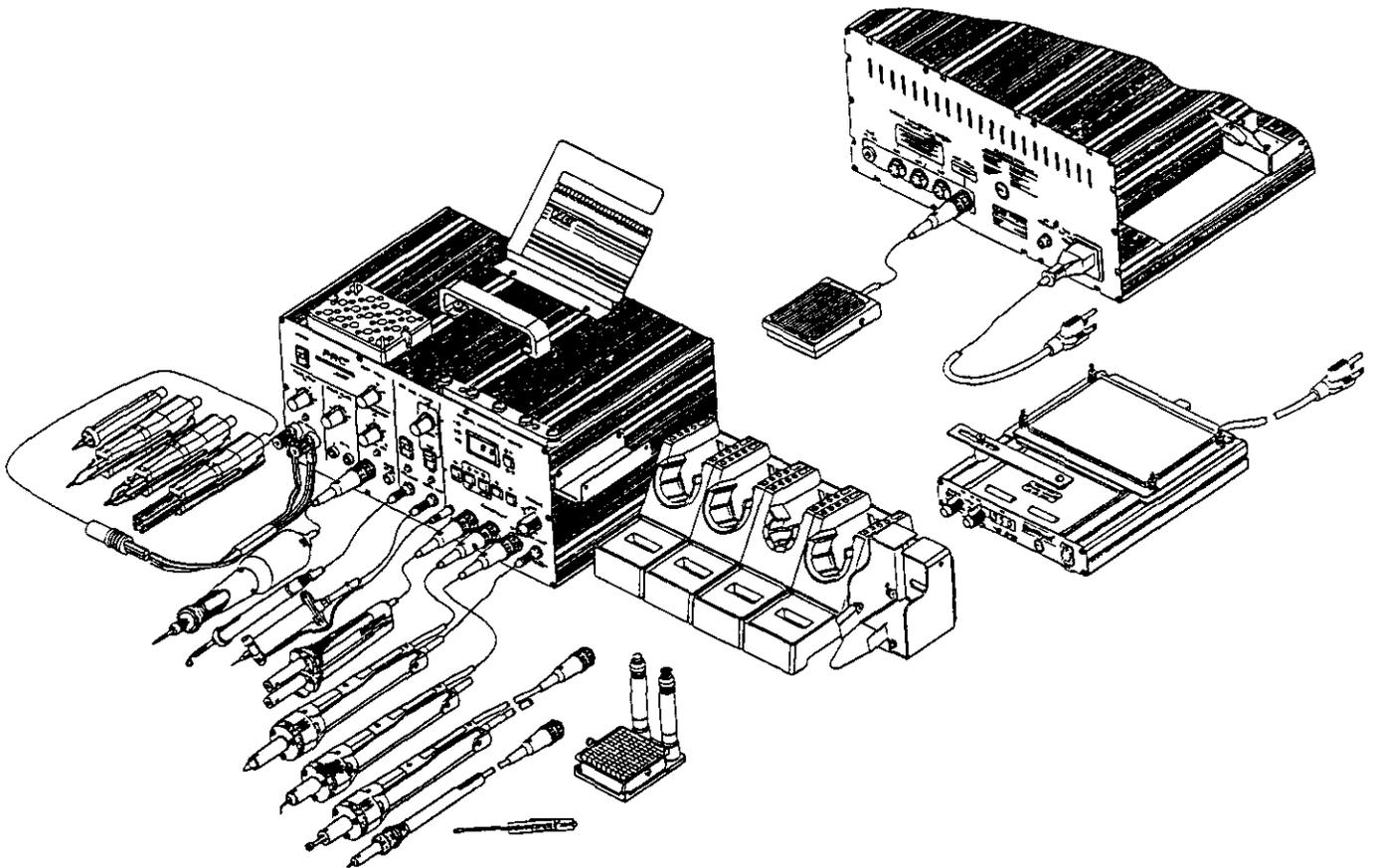
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1 0 SYSTEM/EQUIPMENT DESCRIPTION

1 1 Description The PRC 2000 Miniature/Microminiature (2M) System is a commercial off the shelf process control system for universal assembly and repair of electronic assemblies (see FIGURE 1) The PRC 2000 2M System is the current microminiature rework power unit configuration utilized in the NAVSEA 2M electronic repair program The system contains two primary equipments the Power Source PPS 400 and Hot Spot HS 150 What follows is a brief description of each

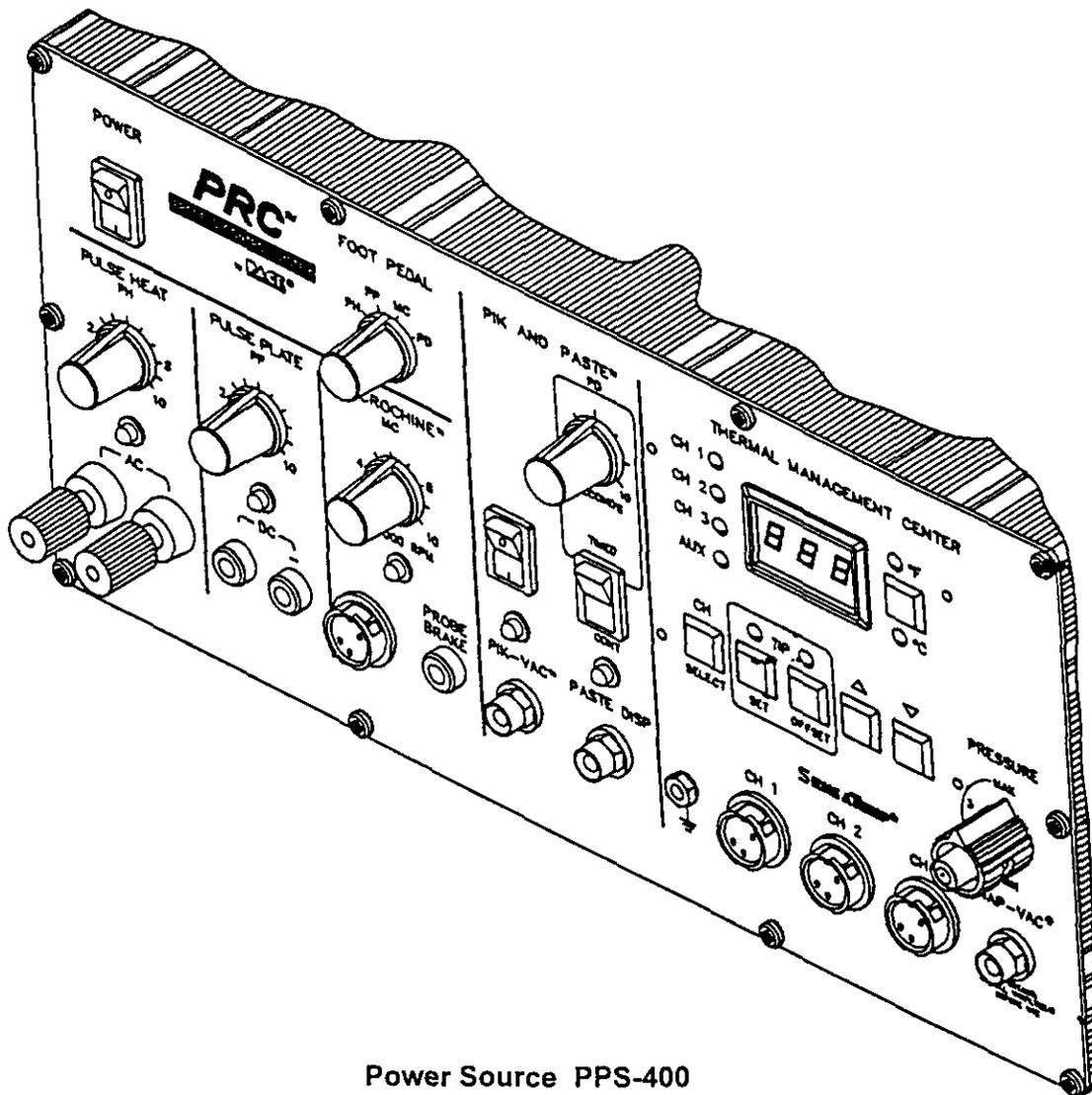


PRC 2000 2M SYSTEM

FIGURE 1

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1 1 1 Power Source PPS-400 The Power Source primarily houses three pumps and three printed circuit boards (PCBs) The three pumps Motor Pump Assembly (Pump 1) Micropump Assembly PPS 400 (Pump 2) and Pump Assembly Low Pressure 21V (Pump 3) provide pressurized air and vacuum for the Thermal Management Center Paste Dispenser and Pik Vac respectively The Microprocessor PCB measures and controls the handpiece temperature established by the operator The Multifunction PCB is used to provide status and control for Pulse Heat Pulse Plate Paste Dispenser Pik Vac and MicroChine functions The board interfaces to front panel controls and indicators via wire harnesses It also interfaces to power supply voltages the Pulse Heat transformer Pik-Vac vacuum pump (Pump 3) and Paste Dispenser motor pump assembly (Pump 2) The Display PCB contains the LEDs and temperature control switches for the Thermal Management Center The Power Source front panel controls are divided into five functional sections the Thermal Management Center Pik and Paste MicroChine Pulse Heat and Pulse Plate (see FIGURE 2) The following is a brief description of each section



Power Source PPS-400

FIGURE 2

1.1.1.1 The Thermal Management Center occupying the right 1/3 of the front panel provides three adjustable output channels to supply low voltage (14VDC) to a soldering iron, solder extractor, and three other specialized handpieces (ThermoTweez, ThermoPik, and Mini ThermoJet). These handpieces are utilized for installation and removal of surface mount and thru-hole electronic components. Three auxiliary channels (rear panel) provide control of separately sold AC line-powered accessories which are currently not a part of the current PRC-2000-2M System. Just to the left of the front panel channels is a grounding jack which will accept a standard banana plug. This can be used for grounding the operation, the work or additional equipment. To the right of the front panel channels are vacuum and controllable pressure ports. These ports provide vacuum and pressure to the solder extractor and Mini ThermoJet respectively for removing and reflowing solder.

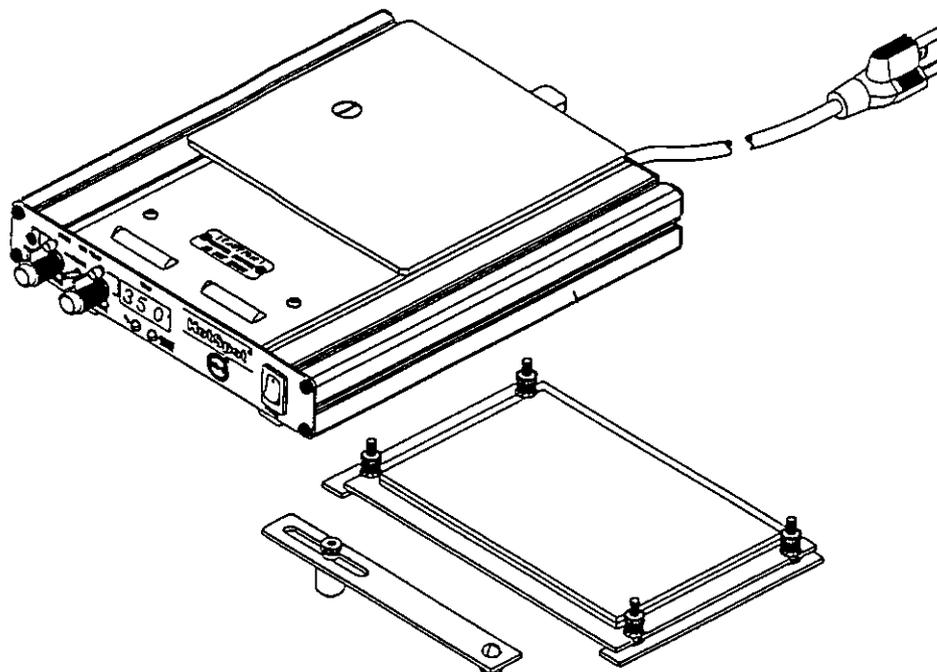
1.1.1.2 The Pik and Paste section is located in the middle of the front panel and is divided into two parts. The Pik-Vac system occupies the left half of the Pik and Paste section. The Pik-Vac provides a vacuum source (3 in. Hg.) to the Pik-Vac wand for use in handling and placing surface mount parts. The paste dispensing system occupies the right half of the Pik and Paste section and can dispense a variety of solder cremes, fluxes, potting compounds and adhesives. The Paste Dispense air hose accepts standard 10cc material barrels. The self-contained pump supplies nominal 40psi (.28 Mpa) of air pressure to the syringe via the Paste Disp port. Above the Paste Disp port is a 2-position switch labeled Timed and Cont which provides timing control for precise dispensing of solder paste and other materials.

1.1.1.3 The MicroChine section located just to the left of the Pik and Paste section provides power and variable speed control to a self-contained motor machining handpiece for precise circuitry and substrate repair. With its tachometer feedback, the MicroChine maintains controlled drilling and milling rates under varying loads. Just to the right of the MicroChine handpiece connection is the Probe Brake jack. The Probe Brake feature instantly stops machining at a selected substrate layer depth when the probe is connected between the jack and a conductive element on the circuit card assembly where the operator wishes the machining to stop.

1.1.1.4 The Pulse Plate section located just to the left of the MicroChine section allows the operator to safely replating damaged, worn or repaired connectors, circuit contacts and edge connectors using plating solutions. This section is not utilized by the 2M electronic repair program.

1.1.1.5 The Pulse Heat section located at the lower left of the front panel provides variable controlled, low voltage AC pulse power to various specialized handpieces including the LapFlo, ResisTweez, ConducTweez, and Strip Tweez for surface mount rework, circuitry repair, conformal coating removal and thermal wire stripping.

1.1.2 Hot Spot, HS-150 (Closed-Loop Temperature-Controlled Auxiliary Heating System). The Hot Spot primarily consists of a Surface Plate Heater Assembly and two PCBs (Main/Display) (see FIGURE 3).



Hot Spot HS 150

FIGURE 3

The purpose of the Hot Spot is to provide controlled heating of high thermal mass assemblies substrates and components to promote rapid solder reflow while preventing thermal shock. The Hot Spot's capabilities support a flexible range of applications including surface-mounted assemblies, ceramic substrates, multilayer boards, hybrid assemblies, and ceramic components. Temperature for both the heating surface and workpiece can be pre set and digitally displayed. The digital temperature display allows the operator to monitor the precise temperature of the heating surface.

1.2 Prior System Currently the 2M electronic repair program is utilizing the government engineered PP 8087/U Power Supply (rework power unit) to perform microminiature repairs. However, the PP 8087/U is limited in repair capability to thru hole technology only and the contract to procure additional units has expired. The PRC 2000 2M System will enhance the existing 2M repair capability for thru hole repairs and add additional repair capability unique to Surface Mount Technology (SMT).

2.0 MANAGEMENT

2.1 Introduction This section will include management planning information associated with the PRC 2000 2M System. The identification of logistics personnel associated with the program, a milestone chart which identifies major planning activities, and the installation/outfitting schedule.

2.2 Integrated Logistic Support (ILS) Program Objective The primary ILS program objective is attainment of an operationally effective and cost effective logistics support system. To achieve this objective, this ILSP defines the approach and management control to assure

that logistics support considerations will be identified. The ILSP activities are planned and scheduled so that they are accomplished at a time when they can be incorporated into the basic program and assure lowest life cycle cost. This ILSP, as an evolutionary document, will be updated or revised as the result of program changes resulting from reliability/maintainability analysis, other support planning and trade-off analysis.

2.3 Integrated Logistics Support Management Team (ILSMT). The ILSMT listed in TABLE 1 is composed of persons tasked with the responsibility for planning and executing PRC-2000-2M System ILS element tasks. FIGURE 2 illustrates the 2M PROGRAM ILS INTERRELATIONSHIP PROFILE.

2.4 Major Planning Milestones. See APPENDIX A for the PRC-2000-2M SYSTEM PLANNING MILESTONES.

2.5 Installation/Outfitting Schedule. See APPENDIX B for the PRC-2000-2M SYSTEM INSTALLATION AND OUTFITTING SCHEDULE.

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TABLE 1 ILS MANAGEMENT TEAM

<u>FUNCTIONAL AREA</u>	<u>NAME</u>	<u>ACTIVITY</u>	<u>PHONE</u>
Program Manager	T. Ingram	NAVSEA 0417	(703) 602-2765
Project Manager	G. Latta	NSWC C6038	(812) 854-1973
ILS Manager	C. Bennett	NSWC C6038	(812) 854-2087
In-Service Engineering Agent (ISEA) Representatives	Peggi Blakley	NSWC C6038	(812) 854-2086
	Andy Ganster	NSWC C6038	(812) 854-2088
	Craig Bennett	NSWC C6038	(812) 854-2087
	ETC Logan	NSWC C6038	(812) 854-6765
Configuration Management	ISEA	NSWC C6038	
Maintenance Planning	ISEA	NSWC C6038	
Packaging, Handling, Storage, and Transportation (PHS&T)	ISEA	NSWC C6038	
Reliability, Maintainability and Quality Assurance	ISEA	NSWC C6038	
Safety Support & Test Equipment	ISEA	NSWC C6038	
	ISEA	NSWC C6038	
Technical Data	ISEA	NSWC C6038	
Supply Support	T. Mullin	NAVICP C05914	(717) 790-5760
	S. Filippelli	NAVICP C05914C	(717) 790-6381
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Training	ETCM Bremer	CNET T23223	(904) 452-5722

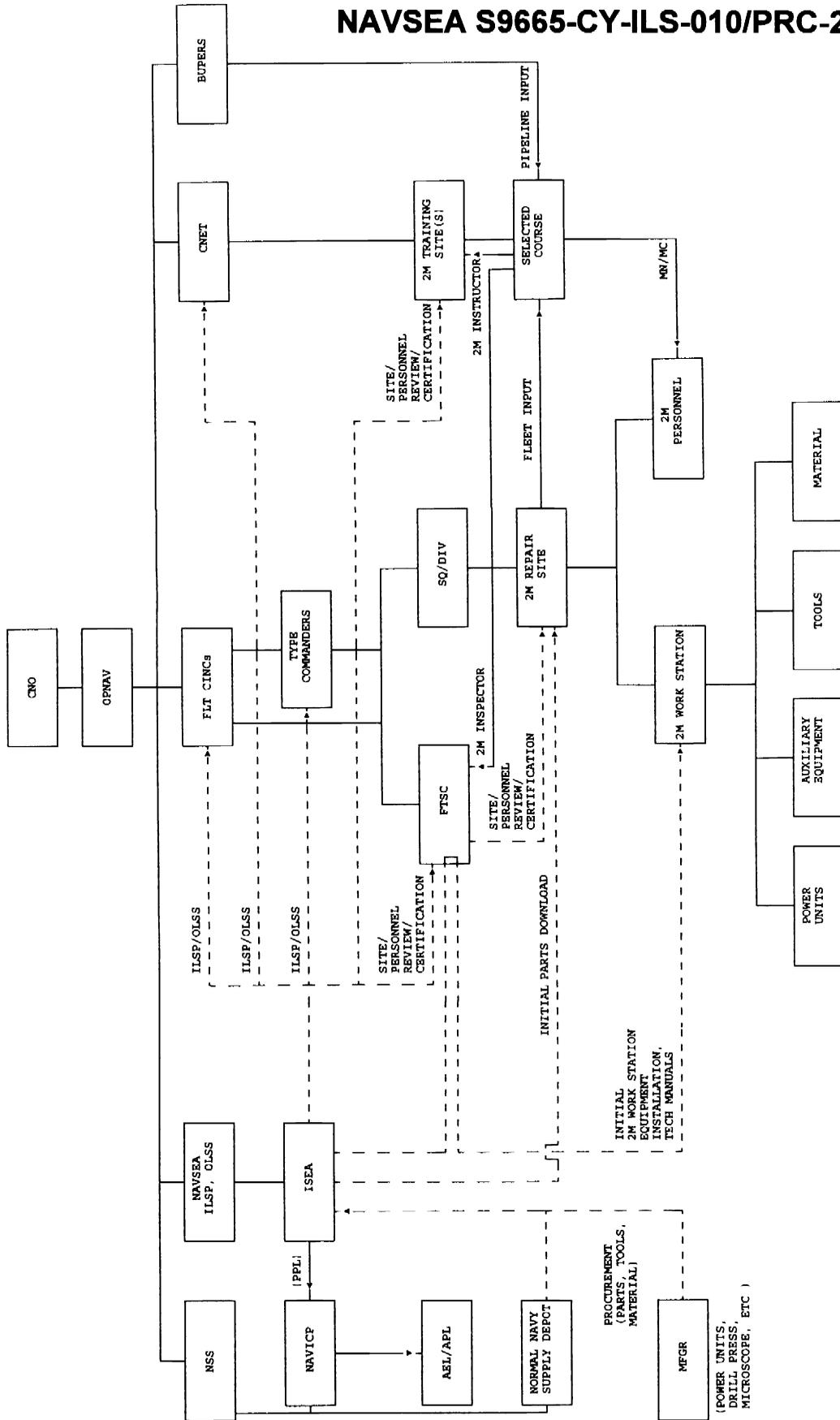


FIGURE 4 2M PROGRAM ILS INTERRELATIONSHIP PROFILE

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3.0 MAINTENANCE PLANNING

3.1 Maintenance Concept. The PRC-2000 is located in the Printed Circuit Board (PCB)/ Module Test and Repair (MTR) Shop or other area as designated by the Commanding Officer (CO) and/or his authorized representative. The PRC-2000-2M System is used at both the Organizational (O) and Intermediate (I) levels to perform repairs on electronic assemblies to include all types of component removal/installation, circuit board preparation and repair. Maintenance, both preventive and corrective/unscheduled maintenance, is to be performed by the 2M technician using a functional 2M rework power unit to perform the repairs. For this system there is no difference in maintenance performed at the O and I-level as both are performing O-level maintenance as far as the PRC-2000-2M System is concerned. (see APPENDIX C for the MAINTENANCE PLAN)

3.1.1 Organizational Maintenance.

3.1.1.1 Preventive Maintenance. PRC-2000-2M System preventive maintenance will be accomplished in accordance with OPNAVINST 4790.4 by existing organizational level Navy 2M personnel. Planned Maintenance System (PMS) requirements are detailed on Maintenance Index Page (MIP), Control Number 6652/005, and its associated Maintenance Requirements Cards (MRCs). Deficiencies/recommendations will be reported on OPNAV Form 4790.7B, Planned Maintenance System Feedback Report (PMS FBR). Maintaining the functionality of the PRC-2000 by routine cleaning, care, and handling is covered in the PRC-2000-2M System Electronic Rework Power Unit Operation and Maintenance Manual (S9665-CY-OMP-010/PRC-2000/U).

3.1.1.2 Corrective/Unscheduled Maintenance. PRC-2000-2M System corrective or unscheduled maintenance will also be accomplished by existing organizational level Navy 2M personnel. The PRC-2000-2M System has some built-in test capabilities to aid in troubleshooting. The PRC-2000-2M System Electronic Rework Power Unit Operation and Maintenance Manual (S9665-CY-OMP-010/PRC-2000/U) provides the required technical information to allow the 2M technician to troubleshoot the system using readily available General Purpose Electronic Test Equipment (GPETE), (Fluke 77/BN Digital Multimeter). In addition, AN/USM-646 Test Station Gold Disks have been developed by NAVUNSEAWARCEN DET Norfolk to aid the 2M technician in locating the defective component in the following Power Source PCBs:

<u>Gold Disk No.</u>	<u>PCB Part No.</u>
001640011.R00	6020-0072, Microprocessor PCB
001640050.R00	6020-0073, Display PCB
001640007.R00	6020-0074, Multifunction PCB

Repairs to the PCBs can be performed at other 2M repair sites on the ship or, in cases where no other repair stations are available, taken to another O-level repair site. If replacement component(s) are not available or repair of the PCB is not technically feasible, a replacement PCB will be requisitioned from the Navy Supply System. Upon replacement of any component and/or PCB all applicable part(s) of the PRC-2000-2M System Electronic Rework Power Unit

Operation and Maintenance Manual (S9665-CY-OMP-010/PRC-2000/U, Operation section), shall be performed.

3.1.1.3 Maintenance Reporting. OPNAVINST 4790.4C, Ships' Maintenance and Material Management (3-M) Manual reporting procedures are adequate for the PRC-2000-2M System. Deficiencies/recommendations for planned maintenance will be reported on OPNAV Form 4790.7B, Planned Maintenance System Feedback Report (PMS FBR). All corrective maintenance for the PRC-2000 will be reported in accordance with OPNAVINST 4790.4C,

Chapter 6, ORGANIZATIONAL LEVEL MAINTENANCE 3-M REPORTING REQUIREMENTS and Chapter 7, INTERMEDIATE LEVEL MAINTENANCE 3-M REPORTING REQUIREMENTS.

3.1.2 Intermediate Maintenance. Intermediate level maintenance will be the same as the Organizational level, listed in the preceding paragraphs.

3.1.3 Depot Maintenance. For the first year, the PRC-2000-2M System will be covered by a 1 year manufacturers warranty from defects in material and/or workmanship. After the first year, the 2M ISEA will serve as the depot for the PRC-2000. Requests for technical assistance in the resolution of maintenance problems beyond the capability of organizational and intermediate level maintenance activities will be directed to the nearest Fleet Technical Support Center (FTSC) Detachment for the fleet and the 2M ISEA for 2M training sites and/or FTSC Detachments. All failed UNITs of the PRC-2000 will be returned to the 2M In-Service Engineering Agent (ISEA) for repair and/or disposal.

3.2 Operational Effectiveness. PRC-2000-2M System operational effectiveness is proportional to the product of PRC-2000 operational availability (Ao), state/level of repair site/personnel 2M certification/recertification, personnel training, and logistic support effectiveness.

3.3 Maintenance Analysis. PACE Incorporated, the manufacturer of the PRC-2000-2M System, provided the 2M ISEA with past service data which identified the number and source of warranty PRC-2000 failures during the first year of commercial service. The 2M ISEA and NAVICP used this and past maintenance history of the prior 2M rework power unit (PP-8087/U, Power Supply) to develop the maintenance concept and logistic support found in this plan.

4.0 SUPPORT EQUIPMENT

No unique support equipment is required. Common hand tools are required to remove the front and rear panels, cables, etc. 2M repair capability is required for piece part repair/replacement. 2M repair tools are available on the Allowance Equipage List (AEL) for Tools and Equipment-2M Repair Stations, 2-670034080. A socket, 9Q 5120-00-227-8105 (11/32" - 1/4" SQ. Drive); handle, 9Q 5120-00-242-3256 (Spin Type - 1/4" SQ. Drive); and extension, 9Q 5120-00-227-8105 (2" LG. - 1/4" SQ. Drive) are required to loosen hex nuts securing the chassis to the case within the Power Source, PPS-400. These items are a part of wrench set, socket 1/4" SQ. Drive, 9Q 5120-00-081-2305, and will be added to the PRC-2000-2M System Allowance Parts List (APL) 00032540 by the end of calendar year 1996. System calibration of the PRC-2000 is not required. All PRC-2000 power supplies are calibrated before they leave the factory to meet all

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PACE Inc. published specifications. The power supply automatically re-calibrates itself every 4 minutes of operation. No external re-calibration is required. The SensaTemp handpieces will continue to meet their specifications as long as proper maintenance is practiced when caring for the heater and tips. If there is a requirement to check the actual tip temperature of a SensaTemp handpiece, procedures for attaching a thermocouple wire to the handpiece tip can be found in the PRC-2000-2M System Electronic Rework Power Unit Operation and Maintenance Manual (S9665-CY-OMP-010/PRC-2000/U, Service Manual section). Pulse Heat handpieces are not closed loop temperature controlled and require no calibration. The two circuit card assemblies within the Hot Spot HS-150 (p/n 6020-0070 PCB UNIT, MAIN/DISPLAY) are a matched pair and replaced as one assembly. A 2M repair technician can troubleshoot and replace components on either card but a calibration procedure will then have to be performed to ensure proper operation after the repair (refer to S9665-CY-OMP-010/PRC-2000/U, Service Manual Addendum, HS 150 Calibration Procedure). The following support parts were identified as being necessary to perform the calibration procedure:

178 ohm resistor, p/n RNC55H1150FS, 9N 5905-00-484-7889, 1/ea
115 ohm resistor, p/n RNC55H1780FS, 9N 5905-00-459-2793, 1/ea

The resistors have been included on the PRC-2000-2M System APL 00032540.

5.0 SUPPLY SUPPORT

5.1 General. The concept of supply support for the PRC-2000-2M System is aligned with the maintenance concept defined in paragraph 3.1. Consumable and repair/spare piece parts used to repair the PRC-2000 will be listed on APL 00032540. Repairable items within the PRC-2000-2M System are as follows:

<u>NOMEN</u>	<u>PART NUMBER</u>	<u>SOURCE MAINTENANCE & RECOVERABILITY (SM&R)</u>
PRC-2000-2M SYSTEM	8007-0161	PAOOD
PRC-2000, Power Source, PPS 400, 115V	7008-0187	PAOOD
PCB, Multifunction, PPS 400	6020-0074	PAOOD
PCB, Microprocessor, PPS 400	6020-0072	PAOOD
PCB, Display, PPS 400	6020-0073	PAOOD
SX-70, Extractor, Solder	6010-0077	PAOOO
SP-2, Sodr-Pen, 21V 48W	6025-0014	PBOOO
TJ-70, Thermojet, Mini	7023-0002	PAOOO
TP-65, Thermopik	7024-0001	PAOOO
TT-65, Thermotweez	7025-0001	PAOOO
HS-150, Hot Spot 150	7040-0002	PAOOD
PCB Unit, Main/Display, HS 150	6020-0070	PAOOD

5.2 Non-Standard Support. Initial downloads of 2M Program-funded pre-expended PRC-2000-2M System equipment/material will be supplied to each command to upgrade 2M electronic repair capabilities. The 2M ISEA will deploy PRC-2000s per SEA 0417 direction.

5.3 Support Planning. The Naval Inventory Control Point (NAVICP) (05914) will develop and maintain the APL. The 2M ISEA/PACE Inc. submitted Provisioning Technical Documentation (PTD) and Provisioning Parts Lists (PPLs) to NAVICP (05914) to develop an APL for the PRC-2000-2M System.

5.4 Supply Assistance. NAVICP (05914) is available for assistance on all items of the PRC-2000-2M System.

6.0 PACKAGING, HANDLING, STORAGE AND TRANSPORTATION (PHS&T)

The PHS&T concept for the PRC-2000-2M System utilizes established facilities (Government and/or Contractor) and applicable MILSPECS.

6.1 Packaging. The PRC-2000-2M System and related parts shall be preserved, packaged, packed, and marked as required in Defense General Supply Center (DGSC) Richmond, Contract No. DLA490-93-D-6081, Section D, DLA490-93-R-2242, (ASTM-D-3951-90).

6.2 Handling. The PRC-2000-2M System has no special handling requirements. Personnel associated with the 2M Program need to be aware of the Electrostatic Discharge (ESD) sensitive nature of the Circuit Card Assemblies (CCAs) within the PRC-2000 and handle them with the appropriate precautions delineated in the Standard Maintenance Practices Miniature/Microminiature (2M) Electronic Assembly Repair (SE004-AK-TRS-010/2M, Work Package 005).

6.3 Storage. There are no special storage requirements. Adequate control must be maintained to ensure that the PRC-2000-2M System is secured to prevent use/misuse by unauthorized personnel.

6.4 Transportation. Acceptable transportation modes for the PRC-2000-2M System are rail, truck, air and water. The overall outside dimensions of the PRC-2000 will allow passage through standard shipboard doorways, arches, and hatches.

7.0 COMPUTER RESOURCES SUPPORT - N/A

8.0 TECHNICAL DATA

8.1 Technical Manuals (TMs). TMs supporting the PRC-2000-2M System are listed below:

<u>TITLE</u>	<u>MANUAL NO./NATIONAL STOCK NO.</u>
*PRC-2000-2M System Electronic Rework Power Unit Operation and Maintenance Manual	S9665-CY-OMP-010/PRC-2000/U 0910-LP-730-6500

*This manual contains all of the following:

NAVSEA S9665-CY-ILS-010/PRC-2000/U

<u>TITLE</u>	<u>MANUAL NO./NATIONAL STOCK NO.</u>
PACE Inc. PRC 2000 System Operation & Maintenance Manual	5050-0313
PACE Inc. TP-65 ThermoPik Handpiece Operational Guidelines	5050-0295
PACE Inc. TT-65 ThermoTweez Handpiece Operation & Maintenance Manual	5050-0300
PACE Inc. SX-70 Sodr-X-Tractor Handpiece Operation & Maintenance Manual	5050-0312
PACE Inc. SP-1/SP-2 Sodr-Pen Soldering Iron Handpiece Operation & Maintenance Manual	5050-0366
PACE Inc. TJ-70 Mini ThermoJet Handpiece Operation & Maintenance Manual	5050-0350
PACE Inc. PRC 2000 Systems Service Manual	5050-0344
PACE Inc. PRC 2000-2M Systems PC Board Troubleshooting & HS 150 Calibration Procedure Service Manual Addendum	5050-0365
PACE Inc. PRC 2000-2M Systems Parts List Service Manual Addendum	5050-0373

One copy of either the PRC-2000-2M System Electronic Rework Power Unit Operation and Maintenance Manual (S9665-CY-OMP-010/PRC-2000/U) or all of the above listed PACE Inc. manuals will be furnished with each PRC-2000. Additional copies of the PRC-2000-2M System Electronic Rework Power Unit Operation and Maintenance Manual (S9665-CY-OMP-010/PRC-2000/U, 0910-LP-730-6500) may be ordered via normal Navy supply requisitioning procedures. Additional copies of any of the above listed PACE Inc. manuals may also be ordered from:

PACE Incorporated
Sales Administration
9893 Brewers Court
Laurel, MD 20723-1990

(301) 490-9860
(301) 498-3252 Fax

8.2 Provisioning Technical Documentation (PTD). In accordance with DGSC Richmond, Contract No. DLA490-93-D-6081, PTD has been provided by PACE Inc. The PTD was used to identify, select, and determine the initial requirements and cataloging of support items to be procured through the provisioning process.

8.3 Supplementary Provisioning Technical Documentation (SPTD). Also, in accordance with DGSC Richmond, Contract No. DLA490-93-D-6081, Section J, Exhibit A, DLA490-93-R-2242, Contract Data Requirements List (CDRL) A002, SPTD has been provided by PACE Inc. The SPTD was used to describe parts and equipment in sufficient detail to verify the equipment configuration and assign National Stock Numbers (NSNs). SPTD consists of specifications, standards, drawings, photographs, sketches, descriptions, and the necessary assembly and general arrangement drawings, schematic drawings, schematic diagrams, wiring and cable diagrams, etc., needed to indicate the physical characteristics, location, and function of the item.

8.4 Technical Data Repository. The 2M ISEA will maintain a master file of engineering drawings, lists, manuals, logistical technical data and other PRC-2000-2M System documentation to include, supply support data and a Configuration Management Plan (CMP). Changes to TMs and engineering drawings will be coordinated between the manufacturer (PACE Inc.) and the 2M ISEA. The 2M ISEA will disseminate all changes to each operating site, in accordance with the NAVSEA Technical Manual Management Program (TMMP) (S0005-AA-PRO-010/TMMP), and the PRC-2000-2M System CMP (see PRC-2000-2M System ILSP, S9665-CY-ILS-010/PRC-2000/U, Appendix E).

9.0 FACILITIES

Existing operation and maintenance facilities are compatible with the PRC-2000-2M System for maintenance, training, support and PHS&T. There are no additional facilities required for support of the PRC-2000; however, 2M repair requires proper environmental conditions. Repair facility requirements, afloat or ashore, include the proper lighting level, adequate ventilation, acceptable noise level considerations, a suitably-sized work surface area, ESD capabilities, and a 115 VAC Hz power source. Each authorized afloat and ashore PRC-2000 2M Repair Site will be initially reviewed and pass subsequent review examinations by certified 2M inspectors. Details of repair site review requirements are defined in the Certification Plan for the 2M Program, NAVSEA TE000-AA-PLN-010/2M.

10.0 MANPOWER AND PERSONNEL

10.1 Manpower. Prior to fleet outfitting, it was determined that addition of the PRC-2000-2M System to the fleet inventory would not require additional personnel for operation. As a result, a HARDMAN analysis is not required. Current technical maintenance allowances for technical billets are sufficient for maintenance of the PRC-2000. Technician assignment for the 2M Work Station (PRC-2000-2M System) is a collateral duty.

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10.2 Staffing. The 2M repair function is a duty performed by trained and certified technicians who are assigned a secondary Navy Enlisted Classification (NEC). As a result, there are billets identified specifically for 2M electronic repair technicians, inspectors, and instructors. The following NECs have been established for 2M:

NEC 9509 - 2M Instructor

NEC 9503 - Miniature/Microminiature Electronic Repair Inspector

NEC 9526 - Microminiature Electronic Repair Technician

NEC 9527 - Miniature Electronic Repair Technician

Training requirements are based on a minimum of one (1) 2M technician for each deployed 2M Work Station. Additional technicians per station require Type Commander (TYCOM) justification. Only 2M certified technicians with a minimum NEC of 9527, 9526, 9503, and/or 9509 may perform 2M repairs or operate the 2M equipment.

10.3 Navy Manning Document Update. Personnel currently trained, certified, and assigned to operate and maintain the 2M equipment (PRC-2000-2M System) are assigned a secondary NEC, as defined within Navy Training Plan (NTP) S-30-8711. There are no planned manning document changes.

11.0 TRAINING AND TRAINING SUPPORT

11.1 Navy Training. Formal training for 2M electronics repair is accomplished by the Chief of Naval Education and Training (CNET) at six (6) training sites:

Fleet Training Center (FLETRACEN), San Diego, CA.
(Designated as the Course Curriculum Model Manager (C²M²))

FLETRACEN, Norfolk, VA.

FLETRACEN, Mayport, FL.

Afloat Training Group (AFLOATRAGRU) MIDPAC, Pearl Harbor, HI.

Naval Air Maintenance Training Group Detachment (NAMTRAGRUDET) 2004, Atsugi, Japan

NAMTRAGRUDET 1001, Whidbey Island, WA.

11.2 Navy Training Plan (NTP). An NTP, S-30-8711, 2M Repair Technicians has been developed for the 2M Program. The 2M Program provides for the repair of CCAs and Electronic Modules (EMs) in the Fleet. The 2M Program supports the Chief of Naval Operations (CNO) philosophy of progressive depot level repair (PDLR) per OPNAVINST 4790.13. The operational fleet and direct fleet support activity requirements are documented in this NTP. This NTP will ensure that the appropriate numbers of trained 2M technicians are available to the fleet to

support self-sustainability and the progressive repair of electronic equipment. Training on the PRC-2000-2M System is a part of the microminiature electronics repair curriculum (A-100-0073). The 2M Instructor certifies those technicians who have successfully completed the course. The 2M Instructor will complete a Performance Information Memorandum (PIM), in accordance with BUPERSINST 1616.10. The completed PIM is signed by the 2M training site command representative and issued to the certifying technician for field service record entry (Page 4).

11.3 On-Board Training (OBT). OBT will not be provided to 2M technicians. The 2M NECs do not require Personnel Qualification Standards (PQS) due to the certification of 2M technicians.

11.4 Contractor Training. No contractor training is planned.

11.5 Training Support Requirements. One PRC-2000-2M System and associated support equipment is required for each technician under training at the 2M training sites. The 2M ISEA provided each training site with the required PRC-2000s and associated equipment for the number and type of courses under their cognizance.

12.0 LOGISTIC REQUIREMENTS AND FUNDING PLAN (LRFP)

The LRFP generated by the 2M ISEA, provides the total life cycle cost breakout by logistic element with source of funding for the PRC-2000-2M System. The LRFP was provided as APPENDIX D to SEA 0417 only.

13.0 INTEGRATED LOGISTICS SUPPORT VERIFICATION AND VALIDATION

Integrated Logistics Support Verification and Validation during the deployment phase will be accomplished through 2M ISEA monitoring, fleet Coordinated Shipboard Allowance List (COSAL) feedback reports, FTSC and Detachment 2M Site Review results, and other Navy activity visits.

14.0 CONTRACTOR LOGISTIC SUPPORT REQUIREMENTS

In accordance with DGSC Richmond, Contract No. DLA490-93-D-6081, PTD and SPTD has been provided by PACE Inc. (see paragraph 8.2 and 8.3) In addition, for the first year, the PRC-2000-2M System will be covered by a 1 year manufacturers warranty from defects in material and/or workmanship by PACE Inc. (see paragraph 3.1.3)

15.0 CONFIGURATION MANAGEMENT

The CMP generated by the 2M ISEA, details the plans and procedures for configuration management of the PRC-2000-2M System. See APPENDIX E for this plan. The PRC-2000-2M System CMP is a tailored version of the requirements found in MIL-STD-973 as they relate to the 2M Program.

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APPENDIX A

MAJOR PLANNING MILESTONES

ACQUISITION PHASE: PRODUCTION/DEPLOYMENT

<u>MAJOR PROGRAM EVENT</u>	<u>ACTUAL DATE</u>	<u>REMARKS</u>
1. Award 3YR Requirements Contract	1 Oct 1993	PACE Inc., Laurel, MD 100-900 units
2. Guidance Conference	8 Dec 1993	Hosted by NAVICP, Code 05914
3. 1st Delivery (School)	1 Mar 1994	
4. Initial Operational Capability	1 Mar 1994	
5. PTD & SPTD Delivery	11 Mar 1994	
6. Provisioning Conference	24 May 1994	Hosted by PACE Inc., Laurel, MD
7. Preliminary Allowance Parts List	25 Jul 1994	
8. 1st Delivery (Ship & Shore)	Dec 1994	
9. Navy Support Date (NSD)	Mar 1996	
10. Material Support Date (MSD)	Mar 1996	
11. Last Operational Capability	Oct 2003	

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APPENDIX B

INSTALLATION/OUTFITTING SCHEDULE

The fleet installation/outfitting schedule is presented below by type of command.

TYPE OF COMMAND (SHIP)	FY94	FY95	FY96	FY97	TOTAL
AGF Misc. Command Ship			1	1	2
AOE Fast Combat Supp. Ship		2	3	3	8
AOR Replenishment Oiler			1		1
AS Submarine Tender		2	3	3	8
CG Guided Missile Cruiser		12	6	9	27
CGN Guided Missile Cruiser Nuclear		1	2		3
CV Aircraft Carrier	1	2	3	1	7
CVN Aircraft Carrier Nuclear	3	10			13
DD Destroyer		14	9	8	31
DDG 51 Class Guided Missile Dest.		6	10	10	26
DDG 993 Class Guided Missile Dest.		2	1	1	4
FFG Guided Missile Frigate		2	22	21	45
LCC Amphibious Command Ship		1	1		2
LHA Amphibious Assault Ship, Gen.		2	2	1	5
LHD Amphibious Assault Ship, Multi.		2	2	2	6
LPH Amphibious Assault Ship, Helic.			2	1	3
LSD Dock Landing Ship		3	5	4	12

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APPENDIX B (Contd)

INSTALLATION/OUTFITTING SCHEDULE

The fleet installation/outfitting schedule is presented below by type of command.

TYPE OF COMMAND (SHORE)	FY94	FY95	FY96	FY97	TOTAL
2M Fleet Training Sites	88				88
Beachmaster Unit			1	1	2
COMNAVCOMTELCOM	4		1	1	6
Fleet Deception Group			1	1	2
Fleet Technical Support Centers/Dets	27	1	1	1	30
GEMD Naval Air Station/NAF	1	8	17	16	42
Mobile Logistic Support Group		2	1	1	4
Ocean Systems Command			1		1
SIMA and SRF	2	6	6	6	20
Special Warfare/Seal Teams/Del.Unit	1	1	9	9	20
Submarine Support Activities		6	5	5	16
White House Communications Agcy			1	1	2
TOTALS	127	85	117	107	436

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APPENDIX C

MAINTENANCE PLAN

TO

INTEGRATED LOGISTIC SUPPORT PLAN

FOR

PRC-2000-MINIATURE/MICROMINIATURE (2M) SYSTEM

ACQUISITION CATEGORY (ACAT) : IV

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MAINTENANCE PLAN

Part I - General Considerations

1.0 HEADING INFORMATION

No. S9665-CY-ILS-010

Nomenclature: PRC-2000-2M System

LCN:

Prepared By: NAVSURFWARCENDIV Crane, IN, Code 6038

Part Number: 8007-0161

NSN 7H 3439-01-415-4165

Date: 1 October 1995

CAGE Code: 17794

Application: 2M Program

2.0 NARRATIVE

2.1. Design Description. The PRC-2000-2M System is a **commercial, off-the-shelf**, process control system for universal assembly and repair of electronic assemblies. The PRC-2000-2M System is the current microminiature rework power unit configuration utilized in the NAVSEA 2M electronic repair program. The system contains two primary equipments, the Power Source, PPS-400 and Hot Spot HS-150. What follows is a brief description of each.

2.1.1 Power Source, PPS-400. The Power Source primarily houses three pumps and three printed circuit boards (PCBs). The three pumps, Motor Pump Assembly (Pump 1), Micropump Assembly, PPS 400 (Pump 2), and Pump Assembly, Low Pressure, 21V (Pump 3) provide pressurized air and vacuum for the Thermal Management Center, Paste Dispenser, and Pik-Vac respectively. The Microprocessor PCB measures and controls the handpiece temperature established by the operator. The Multifunction PCB is used to provide status and control for Pulse Heat, Pulse Plate, Paste Dispenser, Pik-Vac, and MicroChine functions. The board interfaces to front panel controls and indicators via wire harnesses. It also interfaces to power supply voltages, the Pulse Heat transformer, Pik-Vac vacuum pump (Pump 3), and Paste Dispenser motor pump assembly (Pump 2). The Display PCB contains the LEDs and temperature control switches for the Thermal Management Center. The Power Source front panel controls are divided into five functional sections; the Thermal Management Center, Pik and Paste, MicroChine, Pulse Heat, and Pulse Plate.

2.1.2 Hot Spot, HS-150 (Closed-Loop Temperature-Controlled Auxiliary Heating System).

The Hot Spot primarily consists of a Surface Plate Heater Assembly and two PCBs (Main/Display). The purpose of the Hot Spot is to provide controlled heating of high thermal mass assemblies, substrates, and components to promote rapid solder reflow while preventing thermal shock. The Hot Spot's capabilities support a flexible range of applications, including surface-mounted assemblies, ceramic substrates, multilayer boards, hybrid assemblies, and ceramic components. Temperature for both the heating surface and workpiece can be pre-set and digitally displayed. The digital temperature display allows the operator to monitor the precise temperature of the heating surface.

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2.1.3 TABLE 1, lists the CURRENT EQUIPMENT CONFIGURATION of the PRC-2000-2M System as described within this MAINTENANCE PLAN.

TABLE 1 CURRENT EQUIPMENT CONFIGURATION

<u>NOMEN</u>	<u>FUNCTION</u>	<u>REF DES</u>	<u>PART NUMBER</u>
PRC-2000	Power Source, PPS 400, 115V W/Accessories	1	7908-0187
PRC-2000	Power Source, PPS 400, 115V	1A1	7008-0187
	Cleaning Station, SMT	1A2	6021-0006
	Foot Pedal, Treadline	1A3	6008-0115
SX-70	Extractor, Solder, W/Accessories	1A4	6910-0077
SP-2	Sodr-Pen, 21V 48W, W/Accessories	1A5	6925-0014
TJ-70	Thermojet, Mini	1A6	7923-0002
TP-65	Thermopik, W/Accessories	1A7	7924-0001
TT-65	Thermotweez, W/Accessories	1A8	7925-0001
MC-65	Microchine	1A9	7926-0001
PV-65	Pik-Vac	1A10	7027-0001-P1
TW-15	Resistweez, W/Accessories	1A11	7909-0005
TS-15	Striptweez Handpiece	1A12	7012-0002-P1
LF-15	Lapflo, W/Accessories	1A13	7913-0004-02
CT-15	Conductweez Handpiece, W/Accessories	1A14	7920-0001
	Kit, Paste Dispenser	1A15	6993-0152
HS-150	Hot Spot 150 W/Accessories	2	8040-0001

2.2 Maintenance Plan Summary. The PRC-2000 is located in the Printed Circuit Board (PCB)/ Module Test and Repair (MTR) Shop or other area as designated by the Commanding Officer (CO) and/or his authorized representative. The PRC-2000-2M System is used at both the Organizational (O) and Intermediate (I) levels to perform repairs on electronic assemblies to include all types of component removal/installation, circuit board preparation and repair. Maintenance, both preventive and corrective/unscheduled maintenance, is to be performed by the 2M technician using a functional 2M rework power unit to perform the repairs. For this system there is no difference in maintenance performed at the O and I-level as both are performing O-level maintenance as far as the PRC-2000-2M System is concerned. Manufacturer provided PRC-2000 service data for a 12 month period identified that a majority of Power Source failures center around the PCBs and Motor Pump Assemblies (Pump 1 & 2). What follows is a synopsis of that data.

Design Criteria Sample pumps are life tested to 2000 hours of continuous operation with no failures allowed. Sample heaters are life tested to 2000 hours of continuous operation with no failures allowed.

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Number of warranty Power Source failures in a 12 month period (Nov 93 - Oct 94):

Month	No.	Source(s)	Action/Result
Nov/Dec 93	20	Motor Pump Assy (Pump 1) (3) PCB failures (8) Micropump Assy (Pump 2) (9)	Microprocessor changed Identified and corrected Pump spec changed
Jan/Feb 94	27	PCB failures (14) Motor Pump Assy (Pump 1) (6) Micropump Assy (Pump 2) (7)	Identified and corrected Pump spec changed
Mar/Apr 94	23	Motor Pump Assy (Pump 1) (9) Micropump Assy (Pump 2) (6) PCB failures (8)	 Pump spec changed Identified and corrected
May/Jun 94	17	Motor Pump Assy (Pump 1) (3) Micropump Assy (Pump 2) (11) PCB failures (3)	 Pump spec changed Identified and corrected
Jul/Aug 94	25	Motor Pump Assy (Pump 1) (8) Micropump Assy (Pump 2) (10) PCB failures (7)	 Pump spec changed Identified and corrected
Sep/Oct 94	7	Motor Pump Assy (Pump 1) (3) Micropump Assy (Pump 2) (3) PCB failures (1)	 Pump spec changed Identified and corrected
<hr/>			
Total	119		

Units manufactured 1279
Warranty failure 9.3%

Status of major problems

PCB failures: 3.2% Caused for a variety of reasons, but most of the problems were caused by a faulty multiplexer part. A more reliable manufacturer is now being used and results are good.

Micropump Assy (Pump 2): 3.6% Caused by faulty motor turn-on causing a motor winding short. Pump design was changed and new model introduced. The total number of failures has decreased since the change.

Motor Pump Assy (Pump 1): 2.5% Caused by a motor winding short. Working with motor pump supplier to fix problem.

Anticipated failure rate on new construction < 2%

2.2.1 Organizational Maintenance.

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2.2.1.1 Preventive Maintenance. PRC-2000-2M System preventive maintenance will be accomplished in accordance with OPNAVINST 4790.4 by existing organizational level Navy 2M personnel. Planned Maintenance System (PMS) requirements are detailed on Maintenance Index Page (MIP), Control Number 6652/005, and its associated Maintenance Requirements Cards (MRCs). Deficiencies/recommendations will be reported on OPNAV Form 4790.7B, Planned Maintenance System Feedback Report (PMS FBR). Maintaining the functional ability of the PRC-2000 by routine cleaning, care, and handling is covered in the PRC-2000-2M System Electronic Rework Power Unit Operation and Maintenance Manual (S9665-CY-OMP-010/PRC-2000/U).

2.2.1.2 Corrective/Unscheduled Maintenance. PRC-2000-2M System corrective or unscheduled maintenance will also be accomplished by existing organizational level Navy 2M personnel. The PRC-2000-2M System has some built-in test capabilities to aid in troubleshooting. The PRC-2000-2M System Electronic Rework Power Unit Operation and Maintenance Manual (S9665-CY-OMP-010/PRC-2000/U) provides the required technical information to allow the 2M technician to troubleshoot the system using readily available General Purpose Electronic Test Equipment (GPETE), (Fluke 77/BN Digital Multimeter). In addition, AN/USM-646 Test Station Gold Disks have been developed by NAVUNSEAWARCEN DET Norfolk to aid the 2M technician in locating the defective component in the following Power Source PCBs:

<u>Gold Disk No.</u>	<u>PCB Part No.</u>
001640011.R00	6020-0072, Microprocessor PCB
001640050.R00	6020-0073, Display PCB
001640007.R00	6020-0074, Multifunction PCB

Repairs to the PCBs can be performed at other 2M repair sites on the ship or, in cases where no other repair stations are available, taken to another O-level repair site. If replacement component(s) are not available or repair of the PCB is not technically feasible, a replacement PCB will be requisitioned from the Navy Supply System. Upon replacement of any component and/or PCB all applicable part(s) of the PRC-2000-2M System Electronic Rework Power Unit Operation and Maintenance Manual (S9665-CY-OMP-010/PRC-2000/U, Operation section), shall be performed.

2.2.1.3 Maintenance Reporting. OPNAVINST 4790.4C, Ships' Maintenance and Material Management (3-M) Manual reporting procedures are adequate for the PRC-2000-2M System. Deficiencies/recommendations for planned maintenance will be reported on OPNAV Form 4790.7B, Planned Maintenance System Feedback Report (PMS FBR). All corrective maintenance for the PRC-2000 will be reported in accordance with OPNAVINST 4790.4C, Chapter 6, ORGANIZATIONAL LEVEL MAINTENANCE 3-M REPORTING REQUIREMENTS and Chapter 7, INTERMEDIATE LEVEL MAINTENANCE 3-M REPORTING REQUIREMENTS.

2.2.2 Intermediate Maintenance. Intermediate level maintenance will be the same as the Organizational level, listed in the preceding paragraphs.

2.2.3 Depot Maintenance. For the first year, the PRC-2000-2M System will be covered by a 1 year manufacturer's warranty from defects in material and/or workmanship. After the first year, the 2M ISEA will serve as the depot for the PRC-2000. Requests for technical assistance in the resolution of maintenance problems beyond the capability of organizational and intermediate level maintenance activities will be directed to the nearest Fleet Technical Support Center (FTSC) Detachment for the fleet and the 2M ISEA for 2M training sites and/or FTSC Detachments. All failed UNITS of the PRC-2000 will be returned to the 2M In-Service Engineering Agent (ISEA) for repair and/or disposal.

2.2.4 Manpower and Personnel

2.2.4.1 Manpower. Prior to fleet outfitting, it was determined that addition of the PRC-2000-2M System to the fleet inventory would not require additional personnel for operation. As a result, a HARDMAN analysis was not required. Current technical maintenance allowances for technical billets are sufficient for maintenance of the PRC-2000. Technician assignment for the 2M Work Station (PRC-2000-2M System) is a collateral duty.

2.2.4.2 Staffing. The 2M repair function is a duty performed by trained and certified technicians who are assigned a secondary Navy Enlisted Classification (NEC). As a result, there are billets identified specifically for 2M electronic repair technicians, inspectors, and instructors. The following NECs have been established for 2M:

NEC 9509 - 2M Instructor

NEC 9503 - Miniature/Microminiature Electronic Repair Inspector

NEC 9526 - Microminiature Electronic Repair Technician

NEC 9527 - Miniature Electronic Repair Technician

Training requirements are based on a minimum of one (1) 2M technician for each deployed 2M Work Station. Additional technicians per station require Type Commander (TYCOM) justification. Only 2M certified technicians with a minimum NEC of 9527, 9526, 9503, and/or 9509 may perform 2M repairs or operate the 2M equipment.

2.2.4.3 Navy Manning Document Update. Personnel currently trained, certified, and assigned to operate and maintain the 2M equipment (PRC-2000-2M System) are assigned a secondary NEC, as defined within Navy Training Plan (NTP) S-30-8711. There are no planned manning document changes.

2.2.5 Facilities. Existing operation and maintenance facilities are compatible with the PRC-2000-2M System for maintenance, training, support and PHS&T. There are no additional facilities required for support of the PRC-2000; however, 2M repair requires proper environmental conditions. Repair facility requirements, afloat or ashore, include the proper lighting level, adequate ventilation, acceptable noise level considerations, a suitably-sized work surface area, ESD capabilities, and a 115 VAC Hz power source. Each authorized afloat and ashore PRC-2000 2M Repair Site will be initially reviewed and pass subsequent review examinations by certified 2M inspectors. Details of repair site review requirements are defined in the Certification Plan for the 2M Program, NAVSEA TE000-AA-PLN-010/2M.

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2.2.6 Support Equipment. No unique support equipment is required. Common hand tools are required to remove the front and rear panels, cables, etc. 2M repair capability is required for piece part repair/replacement. 2M repair tools are available on the Allowance Equipage List (AEL) for Tools and Equipment-2M Repair Stations, 2-670034080. A socket, 9Q 5120-00-227-8105 (11/32" - 1/4" SQ. Drive); handle, 9Q 5120-00-242-3256 (Spin Type - 1/4" SQ. Drive); and extension, 9Q 5120-00-227-8105 (2" LG. - 1/4" SQ. Drive) are required to loosen hex nuts securing the chassis to the case within the Power Source, PPS-400. These items are a part of wrench set, socket 1/4" SQ. Drive, 9Q 5120-00-081-2305, and will be added to the PRC-2000-2M System Allowance Parts List (APL) 00032540 by the end of calendar year 1996. System calibration of the PRC-2000 is not required. All PRC-2000 power supplies are calibrated before they leave the factory to meet all PACE Inc. published specifications. The power supply automatically re-calibrates itself every 4 minutes of operation. No external re-calibration is required. The SensaTemp handpieces will continue to meet their specifications as long as proper maintenance is practiced when caring for the heater and tips. If there is a requirement to check the actual tip temperature of a SensaTemp handpiece, procedures for attaching a thermocouple wire to the handpiece tip can be found in the PRC-2000-2M System Electronic Rework Power Unit Operation and Maintenance Manual (S9665-CY-OMP-010/PRC-2000/U, Service Manual section). Pulse Heat handpieces are not closed loop temperature controlled and require no calibration. The two circuit card assemblies within the Hot Spot HS-150 (p/n 6020-0070 PCB UNIT, MAIN/DISPLAY) are a matched pair and replaced as one assembly. A 2M repair technician can troubleshoot and replace components on either card but a calibration procedure will then have to be performed to ensure proper operation after the repair (refer to S9665-CY-OMP-010/PRC-2000/U, Service Manual Addendum, HS 150 Calibration Procedure). The following support parts were identified as being necessary to perform the calibration procedure:

178 ohm resistor, p/n RNC55H1150FS, 9N 5905-00-484-7889, 1/ea

115 ohm resistor, p/n RNC55H1780FS, 9N 5905-00-459-2793, 1/ea

The resistors have been included on the PRC-2000-2M System APL 00032540.

2.3 Plan Rationale. This MAINTENANCE PLAN is based on analysis of manufacturer provided service data and through experience with the predecessor of the PRC-2000-2M System. Currently, the 2M Program is utilizing the government engineered PP-8087/U Power Supply (APL 00019082) as the standard miniature and microminiature rework power unit. The PP-8087/U is very similar in function and design to the PRC-2000. The main difference between the two units is the SMT repair capability provided with the PRC-2000-2M System. The maintenance philosophy described within this MAINTENANCE PLAN is consistent with that of the PP-8087/U.

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MAINTENANCE PLAN

Part II - Repair Capability

1.0 HEADING INFORMATION

No. S9665-CY-ILS-010

Nomenclature: PRC-2000-2M System

LCN:

Prepared By: NAVSURFWARCENDIV Crane, IN, Code 6038

Part Number: 8007-0161

NSN 7H 3439-01-415-4165

Date: 1 October 1995

CAGE Code: 17794

Application: 2M Program

SM&R Code: PAOOD

DLSC Screen:

2.0

REPAIRABLE ITEMS

Part Number	NSN	Nomenclature	SM&R	*TRF
8007-0161	3439-01-415-4165	PRC-2000-2M SYSTEM	PAOOD	0.0100
7008-0187	6130-01-407-1338	PRC-2000, Power Source, PPS 400, 115V	PAOOD	0.0100
6020-0074	5998-01-407-1340	PCB, Multifunction, PPS 400	PAOOD	0.0170
6020-0072	5998-01-407-1341	PCB, Microprocessor, PPS 400	PAOOD	0.0100
6020-0073	5998-01-407-1339	PCB, Display, PPS 400	PAOOD	0.0070
6010-0077	3439-01-348-8883	SX-70, Extractor, Solder	PAOOO	0.9620
6025-0014	3439-01-398-2750	SP-2, Sodr-Pen, 21V 48W	PBOOO	0.9620
7023-0002	3439-01-399-4906	TJ-70, Thermojet, Mini	PAOOO	0.9620
7024-0001	3439-01-380-8913	TP-65, Thermopik	PAOOO	0.9620
7025-0001	3439-01-381-6323	TT-65, Thermotweez	PAOOO	0.9620
7040-0002	6685-01-406-4453	HS-150, Hot Spot 150	PAOOD	0.0100
6020-0070	5998-01-406-4454	PCB Unit, Main/Display, HS 150	PAOOD	0.0100

* The Technical Replacement Factor or TRF represents the annual wearout/failure rate. It is calculated in terms of the item's average rate of replacement anticipated under field usage. Replacement rates include random and wearout failures from faulty maintenance, improper

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operation, environment, etc. The TRF is stated as the number of anticipated annual replacements per 100 applications of the item for 2000 hours of operation per year.

The Mean Time Between Failure (MTBF) for the entire PRC-2000-2M System (P/N 8007-0161) is estimated to be .1 or 1 failure in 10 years.

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MAINTENANCE PLAN

Part III - Maintenance Requirement

1.0 HEADING INFORMATION

No. S9665-CY-ILS-010

Nomenclature: PRC-2000-2M System

LCN:

Prepared By: NAVSURFWARCENDIV Crane, IN, Code 6038

Part Number: 8007-0161

NSN 7H 3439-01-415-4165

Date: 1 October 1995

CAGE Code: 17794

Application: 2M Program

2.0

MAINTENANCE REQUIREMENTS

LCN/ Req. No.	Maintenance Requirement	Maintenance Level	Interval	Common/Special SE Requirement (includes MANs)
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2.1 Preventive Maintenance. Organizational (O)/Intermediate (I) level preventive maintenance requirements are detailed on MIP Control Number 6652/005 and include monthly, semi-annual, and as needed, cleaning, inspections, operational checks, and parts replace requirements. The PRC-2000-2M System is designed so that minimal preventive maintenance is necessary.

2.1.1 Power Source, PPS 400, 115V (1A1)

Perform operational test of PRC-2000-2M System.	O & I	Semi-Annually/ dr., Situation	Handle, socket wrench, 1/4" rev ratchet, SPMIG-1811
Check PACE system pressure/vacuum.			Handle, socket wrench, 1/4" dr., rev ratchet, SPMIG-1811
Check for pressure/vacuum leaks and clean and inspect PACE system interior.			Screwdriver, cross tip, No. 2 phillips, 6", SPMIG-3434
			Socket, socket wrench, 11/32", 1/4" dr. (Mfr. Part No. A-A-1407, CAGE 58536)
			Faceshield, industrial, tilting, style A, size 4, SPMIG-0419
			Goggles, industrial, ventilated, flex, frame, SPMIG-0535

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LCN/ Req. No.	Maintenance Requirement	Maintenance Level	Interval	Common/Special SE Requirement (includes MANs)
				Adapter, straight, pipe to hose, SPMIG-0633
				Technical manuals/drawings (PACE Inc. Manual No. 5050 -0344)
				Gage, compound pressure vacuum dial indicating, 0-30" mercury, 0-60 PSI range (Mfr. Part No. 046646, CAGE 61349)

NOTE: Accomplished semiannually or when pressure/vacuum fall below minimum working standards.

2.1.2 Extractor, Solder, SX-70 W/Accessories (1A4)

Clean, inspect, and check PACE SX-70 solder extractor.	O & I	Monthly	Multimeter, digital, SCAT-4245, Model 77/AN
			Screwdriver, flat tip, 2", pocket clip, 1/8" tip, SPMIG-1187
			Brush, wire, 1/8" (Mfr. Part No. 1127-0006, CAGE 17794)
			Brush, wire, 3/16" (Mfr. Part No. 1127-0014, CAGE 17794)
			Technical manuals/drawings (PACE Inc. Manual No. 5050 -0344)
			MRC(s) (R-1), SPMIG-2000
Clean PACE SX-70 solder extractor.	O & I	Situation	Screwdriver, flat tip, 2", pocket clip, 1/8" tip, SPMIG-1187
			Brush, bristle (Mfr. Part No. 1127-0002, CAGE 17794)
			Brush, Wire, 1/8" (Mfr. Part No. 1127-0006, CAGE 17794)
			Pliers, jewelers, 4 1/2" (Mfr. Part No. LN-54, CAGE 19915)
			Goggles, industrial, ventilated, flex, frame, SPMIG-0535

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LCN/ Req. No.	Maintenance Requirement	Maintenance Level	Interval	Common/Special SE Requirement (includes MANs)
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NOTE: Accomplished whenever handpiece is utilized.

2.1.3 Sodr-Pen, 21V 48W, SP-2 W/Accessories (1A5)

Clean, inspect, and check PACE SP-2 soldering iron.	O & I	Monthly	Multimeter, digital, SCAT-4245, Model 77/AN
			Screwdriver, flat tip, 2", pocket clip, 1/8" tip, SPMIG-1187
			Brush, wire, 1/8" (Mfr. Part No. 1127-0006, CAGE 17794)
			Brush, wire, 3/16" (Mfr. Part No. 1127-0014, CAGE 17794)
			Technical manuals/drawings (PACE Inc. Manual No. 5050-0344)

2.1.4 ThermoPik, TP-65 W/Accessories (1A7)

Clean, inspect, and check PACE TP-65 ThermoPik handpiece.	O & I	Situation Monthly	Multimeter, digital, SCAT-4245, Model 77/AN
			Screwdriver, flat tip, 2", pocket clip, 1/8" tip, SPMIG-1187
			Brush, wire, 3/16" (Mfr. Part No. 1127-0014, CAGE 17794)
			Technical manuals/drawings (PACE Inc. Manual No. 5050-0300 and 5050-0344)

NOTE: Accomplished monthly whenever handpiece is utilized.

2.1.5 ThermoTweez, TT-65 W/Accessories (1A8)

Clean, inspect, and check PACE TT-65 ThermoTweez handpiece.	O & I	Situation Monthly	Multimeter, digital, SCAT-4245, Model 77/AN
			Screwdriver, flat tip, 2", pocket clip, 1/8" tip, SPMIG-1187
			Brush, wire, 3/16" (Mfr. Part No. 1127-0014, CAGE 17794)

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LCN/ Req. No.	Maintenance Requirement	Maintenance Level	Interval	Common/Special SE Requirement (includes MANs)
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Technical manuals/drawings
(PACE Inc. Manual No. 5050
-0300 and 5050-0344)

NOTE: Accomplished monthly whenever
handpiece is utilized.

2.2 Corrective Maintenance. The PRC-2000-2M System has some built-in test capabilities to aid in troubleshooting. The PRC-2000-2M System Electronic Rework Power Unit Operation and Maintenance Manual (S9665-CY-OMP-010/PRC-2000/U) provides the required technical information to allow the 2M technician to troubleshoot the system using readily available General Purpose Electronic Test Equipment (GPETE), (Fluke 77/BN Digital Multimeter). In addition, AN/USM-646 Test Station Gold Disks have been developed to aid the 2M technician in locating the defective component. Repairs to the PCBs can be performed at other 2M repair sites on the ship or, in cases where no other repair stations are available, taken to another O-level repair site. If replacement component(s) are not available or repair of the PCB is not technically feasible, a replacement PCB will be requisitioned from the Navy Supply System. Upon replacement of any component and/or PCB all applicable part(s) of the PRC-2000-2M System Electronic Rework Power Unit Operation and Maintenance Manual (S9665-CY-OMP-010/PRC-2000/U, Operation section), shall be performed.

2.2.1 Power Source, PPS 400, 115V (1A1)

Functionally test UNIT. Verify operational readiness using PACE Inc. Manual No. 5050-0313, Set-Up and Operation section.	O & I	N/A	None
Fault Isolate. Troubleshoot unit to locate defective component using PACE Inc. Manual No. 5050-0344, Repair section, Manual No. 5050-0365, AN/USM-646, Test Station, Electrical/Electronic Equipment Gold Disk, and standard troubleshooting techniques.	O & I	N/A	Multimeter, digital, SCAT-4245, Model 77/AN AN/USM-646 (57705), Test Station, Electrical/Electronic Equipment
Remove/Replace. Remove and replace faulty component using Navy approved 2M repair techniques.	O & I	N/A	Tools and Equipment-2M Repair Stations, Allowance Equipage List (AEL) 2-670034080
Functional retest. Verify operational readiness of unit after replacement/repair of component.	O & I	N/A	None

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LCN/ Req. No.	Maintenance Requirement	Maintenance Level	Interval	Common/Special SE Requirement (includes MANs)
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2.2.2 Extractor, Solder, SX-70 W/Accessories (1A4)

	Functionally test unit. Verify operational readiness using PACE Inc. Manual No. 5050-0313, Set-Up and Operation section.	O & I	N/A	None
	Fault Isolate. Troubleshoot unit to locate defect using PACE Inc. Manual No. 5050-0313, Corrective Maintenance section for handpieces and standard troubleshooting techniques.	O & I	N/A	Multimeter, digital, SCAT-4245, Model 77/AN
	Remove/Replace. Remove and replace 2M repair techniques.	O & I	N/A	Tools and Equipment-2M Repair Stations, Allowance Equipage List (AEL) 2-670034080
	Functional retest. Verify operational readiness of unit after replacement/ repair of component.	O & I	N/A	None

2.2.3 Sodr-Pen, 21V 48W, SP-2 W/Accessories (1A5)

	Functionally test unit. Verify operational readiness using PACE Inc. Manual No. 5050-0313, Set-Up and Operation section.	O & I	N/A	None
	Fault Isolate. Troubleshoot unit to locate defect using PACE Inc. Manual No. 5050-0313, Corrective Maintenance section for handpieces and standard troubleshooting techniques.	O & I	N/A	Multimeter, digital, SCAT-4245, Model 77/AN
	Remove/Replace. Remove and replace faulty component using Navy approved 2M repair techniques.	O & I	N/A	Tools and Equipment-2M Repair Stations, Allowance Equipage List (AEL) 2-670034080

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LCN/ Req. No.	Maintenance Requirement	Maintenance Level	Interval	Common/Special SE Requirement (includes MANs)
	Functional retest. Verify operational readiness of unit after replacement/ repair of component.	O & I	N/A	None

2.2.4 ThermoPik, TP-65 W/Accessories (1A7)

	Functionally test unit. Verify operational readiness using PACE Inc. Manual No. 5050-0295, Operational Guidelines TP-65 ThermoPik Handpiece.	O & I	N/A	None
	Fault Isolate. Troubleshoot unit to locate defect using PACE Inc. Manual No. 5050-0295, Corrective Maintenance section and standard troubleshooting techniques.	O & I	N/A	Multimeter, digital, SCAT-4245, Model 77/AN
	Remove/Replace. Remove and replace faulty component using Navy approved 2M repair techniques.	O & I	N/A	Tools and Equipment-2M Repair Stations, Allowance Equipage List (AEL) 2-670034080
	Functional retest. Verify operational readiness of unit after replacement/ repair of component.	O & I	N/A	None

2.2.5 ThermoTweez, TT-65 W/Accessories (1A8)

	Functionally test unit. Verify operational readiness using PACE Inc. Manual No. 5050-0300, Operational Guidelines TT-65 ThermoTweez Handpiece.	O & I	N/A	None
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<u>LCN/ Req. No.</u>	<u>Maintenance Requirement</u>	<u>Maintenance Level</u>	<u>Interval</u>	<u>Common/Special SE Requirement (includes MANs)</u>
	Fault Isolate. Troubleshoot unit to locate defect using PACE Inc. Manual No. 5050-0300, Corrective Maintenance section and standard troubleshooting techniques.	O & I	N/A	Multimeter, digital, SCAT-4245, Model 77/AN
	Remove/Replace. Remove and replace faulty component using Navy approved 2M repair techniques.	O & I	N/A	Tools and Equipment-2M Repair Stations, Allowance Equipage List (AEL) 2-670034080
	Functional retest. Verify operational readiness of unit after replacement/ repair of component.	O & I	N/A	None

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NAVSEA CMP No. S9665-CY-ILS-010

APPENDIX E

CONFIGURATION MANAGEMENT PLAN (CMP)

TO

INTEGRATED LOGISTIC SUPPORT PLAN

FOR THE

PRC-2000-MINIATURE/MICROMINIATURE (2M) SYSTEM

CONTRACT NO. DLA490-93-D-6081

1 OCTOBER 1995

PREPARED FOR: SEA 0417

PREPARED BY: NAVSURFWARCENDIV Crane, Code 6038 (N00164)

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1.0 INTRODUCTION

1.1 Purpose. The 2M Program requires the implementation of Configuration Management (CM) procedures to:

Identify the Product Baseline (PBL) of the Configuration Items (CIs).

Control changes to the PBL.

Provide configuration control of the PRC-2000-2M System.

Record life cycle change implementation and Configuration Status Accounting (CSA) of the PRC-2000-2M System.

SEA 0417 manages CM through the Configuration Control Board (CCB) in accordance with established CM policy.

1.2 Scope. This Configuration Management Plan (CMP) addresses CM of the PRC-2000-2M System as part of the 2M Program. It provides CM guidance for use by the 2M Program Manager, SEA 0417, the 2M In-Service Engineering Agent (ISEA), and other cognizant government activities. This document conforms with the requirements of MIL-STD-973 and applies to all of the program phases described in paragraph 4.

1.3 Description of the Configuration Item (CI). The PRC-2000-2M System is a **commercial, off-the-shelf**, process control system for universal assembly and repair of electronic assemblies. The PRC-2000-2M System is the current microminiature rework power unit configuration utilized in the NAVSEA 2M electronic repair program. The system contains two primary equipments, the Power Source, PPS-400 and Hot Spot, HS-150. What follows is a brief description of each.

1.3.1 Power Source, PPS-400. The Power Source primarily houses three pumps and three printed circuit boards (PCBs). The three pumps, Motor Pump Assembly (Pump 1), Micropump Assembly, PPS 400 (Pump 2), and Pump Assembly, Low Pressure, 21V (Pump 3) provide pressurized air and vacuum for the Thermal Management Center, Paste Dispenser, and Pik-Vac respectively. The Microprocessor PCB measures and controls the handpiece temperature established by the operator. The Multifunction PCB is used to provide status and control for Pulse Heat, Pulse Plate, Paste Dispenser, Pik-Vac, and MicroChine functions. The board interfaces to front panel controls and indicators via wire harnesses. It also interfaces to power supply voltages, the Pulse Heat transformer, Pik-Vac vacuum pump (Pump 3), and Paste Dispenser motor pump assembly (Pump 2). The Display PCB contains the LEDs and temperature control switches for the Thermal Management Center. The Power Source front panel controls are divided into five functional sections; the Thermal Management Center, Pik and Paste, MicroChine, Pulse Heat, and Pulse Plate.

1.3.2 Hot Spot, HS-150 (Closed-Loop Temperature-Controlled Auxiliary Heating System). The Hot Spot primarily consists of a Surface Plate Heater Assembly and two PCBs (Main/Display). The purpose of the Hot Spot is to provide controlled heating of high thermal mass assemblies, substrates, and components to promote rapid solder reflow while preventing thermal shock. The Hot Spot's capabilities support a flexible range of applications, including

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surface-mounted assemblies, ceramic substrates, multilayer boards, hybrid assemblies, and ceramic components. Temperature for both the heating surface and workpiece can be pre-set and digitally displayed. The digital temperature display allows the operator to monitor the precise temperature of the heating surface.

1.3.3 Current Equipment Configuration. TABLE 1, lists the CURRENT EQUIPMENT CONFIGURATION of the PRC-2000-2M System, including options/accessories, available in the Navy's Inventory at NAVSURFWARCENDIV Crane IN.

TABLE 1 CURRENT EQUIPMENT CONFIGURATION

<u>NOMEN</u>	<u>FUNCTION</u>	<u>REF DES</u>	<u>PART NUMBER</u>
PRC-2000	Power Source, PPS 400, 115V W/Accessories	1	7908-0187
PRC-2000	Power Source, PPS 400, 115V	1A1	7008-0187
	Cleaning Station, SMT	1A2	6021-0006
	Foot Pedal, Treadline	1A3	6008-0115
SX-70	Extractor, Solder, W/Accessories	1A4	6910-0077
SP-2	Sodr-Pen, 21V 48W, W/Accessories	1A5	6925-0014
TJ-70	Thermojet, Mini	1A6	7923-0002
TP-65	Thermopik, W/Accessories	1A7	7924-0001
TT-65	Thermotweez, W/Accessories	1A8	7925-0001
MC-65	Microchine	1A9	7926-0001
PV-65	Pik-Vac	1A10	7027-0001-P1
TW-15	Resistweez, W/Accessories	1A11	7909-0005
TS-15	Striptweez Handpiece	1A12	7012-0002-P1
LF-15	Lapflo, W/Accessories	1A13	7913-0004-02
CT-15	Conductweez Handpiece, W/Accessories	1A14	7920-0001
	Kit, Paste Dispenser	1A15	6993-0152
HS-150	Hot Spot 150 W/Accessories	2	8040-0001

1.3.3.1 2M-MTR Enhanced Soldering Rework Power Unit (RPU). As tasked by Commander, Naval Sea Systems Command (COMNAVSEASYS COM) (SEA 04MP12), Commander, Naval Telecommunications Command, and Commander, Naval Air Force U.S. Atlantic and Pacific Fleet, Naval Undersea Warfare Center Detachment (NAVUNSEAWARCEN DET), Norfolk (Code 24311) provided (43) selected commands with 2M-Module Test and Repair (MTR) enhanced soldering repair hardware from 9 January 1992 through September 1994. The purpose of this deployment was to establish an enhanced repair capability at various training and fleet commands in support of the progressive level repair policy of the Chief of Naval Operations. The hardware provided included a PRC-2000 with accessories and consumable spares similar but different from the NAVSURFWARCENDIV Crane PRC-2000-2M System configuration. SEA 0417, Program Manager (PM) for the 2M Program, identified the NAVSURFWARCENDIV Crane configuration as the Navy's (DLA490-93-D-6081 refers) and directed Crane to bring all previously deployed PRC-2000's up to the Crane configuration. On 3 December 1994, the 2M ISEA submitted an ID/IQ contract procurement package to the

contracting division at NAVSURWARCENDIV Crane to purchase a minimum of (10) and with additional funding a total of (43) 2M-MTR (PRC-2000) upgrade kits. Upon receipt, the 2M ISEA will deploy all (43) upgrade kits to the appropriate commands.

1.4 Acronyms.

2M	Miniature/Microminiature
CCB	Configuration Control Board
CDM	Configuration Data Manager
CE-D	Concept Exploration and Definition
CI	Configuration Item
CM	Configuration Management
CMP	Configuration Management Plan
CSA	Configuration Status Accounting
DLA	Defense Logistics Agency
DT	Development Test
DV	Demonstration and Validation
E&MD	Engineering and Manufacturing Development
EC	Engineering Change
ECP	Engineering Change Proposal
ESD	Electrostatic Discharge
FMP	Fleet Modernization Program
FRP DELs	Full-Rate Production Deliveries
FTSC	Fleet Technical Support Center
ICPs	Inventory Control Points
ID/IQ	Indefinite Delivery/Indefinite Quantity
ILS	Integrated Logistic Support
ILSP	Integrated Logistic Support Plan
ISEA	In-Service Engineering Agent
LRIP	Low-Rate Initial Production
MTR	Module Test and Repair
NAVICP	Naval Inventory Control Point
NEC	Navy Enlisted Classification
NDI	Non-Developmental Item
O&S	Operation and Support
OT	Operational Test
P&D	Production and Deployment
PBL	Product Baseline
PCA	Physical Configuration Audit
PCI	Product Configuration Identification
PM	Program Manager
PSICP	Program Support Inventory Control Point
SCLISIS	Ships' Configuration and Logistics Support Information System
SSRs	Supply Support Requests
TM	Technical Manual
TMDER	Technical Manual Deficiency/Evaluation Report
TSA	Technical Support Activity
TYCOM	Type Commander
WSF	Weapons Systems File

NAVSEA S9665-CY-ILS-010/PRC-2000/U

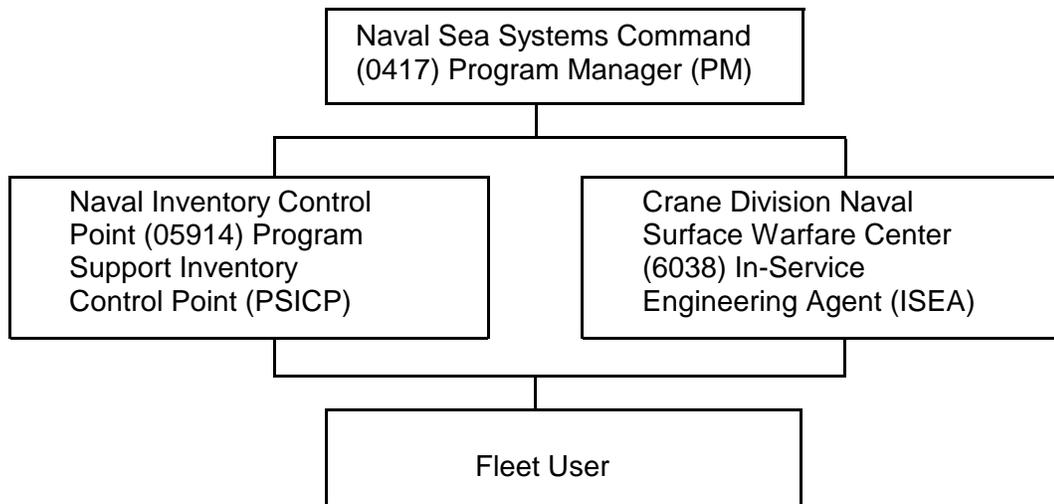
2.0 REFERENCE DOCUMENTS

<u>TITLE</u>	<u>DOC. NUMBER</u>	<u>ISS. AUTHORITY</u>	<u>REV. NOT.</u>	<u>DATE</u>
Maintenance of Surface Ship Electronic Equipment	OPNAVINST 4790.13	OP-325		Sep 87
Fleet Test and Repair of Shipboard Electronic Equipment	NAVSEAINST 4790.17	SEA 06Q	A	Nov 88
Navy Miniature/Microminiature (2M) Electronic Repair/Automatic Test Equipment (ATE) Strategic Plan	NAVSEA ltr 9082 Ser: 04DS2/011	SEA 04DS2		Apr 94
PRC-2000-2M System Contract	DLA490-93-D-6081	DGSC-PDCA/CK855		Oct 93

2.1 Policy Directives. It is the policy of the Chief of Naval Operations (CNO) that fleet electronic equipment maintenance will be accomplished at the lowest practical level which ensures an optimum economic use of resources and achieves required operational readiness. Program managers must take into account the 2M capability at the organizational and intermediate level when developing maintenance plans. The 2M Program provides the capability for doing high reliability and high quality repairs of electronic assemblies, primarily CCAs and EMs, 2M repair capability consists of the training, tools (to include PRC-2000-2M System), techniques and documentation needed for doing repairs in the fleet. As set forth in the Navy 2M/Automatic Test Equipment Strategic Plan, dated 11 April 1994, the standard Navy 2M equipment will be the existing PP-8087/U units and the PRC-2000. Older 2M equipment will be phased out as the PP-8087/U and PRC-2000 units become available. A contract for the PRC-2000 was awarded 1 October 1993 (DGSC Contract No. DLA490-93-D-6081 refers) which allows outfitting of all 2M microstations with the PRC-2000.

3.0 ORGANIZATION

3.1 Structure. FIGURE 1 depicts the PRC-2000-2M System configuration management organizational structure. The following paragraphs provide a brief description of each organization's role in providing configuration management support.



**PRC-2000-2M SYSTEM
CONFIGURATION MANAGEMENT ORGANIZATIONAL STRUCTURE**

FIGURE 1

3.2 Responsibility and Authority.

3.2.1 Naval Sea Systems Command, SEA 0417. NAVSEA 0417 was designated by the Deputy Commander for Fleet Logistics Support, SEA 04, as the single point of contact for program management and execution of the 2M Program. SEA 0417 is to provide overall program management, field activity oversight and policy formulation. SEA 0417 will also initiate technical and engineering studies and reviews for ongoing efforts and development of new methods and procedures related to the 2M Program. SEA 0417 will also:

Task NAVSEA and other Navy Shore Activities, via the appropriate chain of command, to provide support related to the 2M Program.

Prepare and defend budget submissions.

Determine program requirements and objectives.

Develop and execute program plans.

Monitor program performance.

Serve as NAVSEASYSKOM focal point for 2M matters and Progressive Depot Level Repair maintenance planning for systems with electronic circuitry.

Serve as NAVSEA focal point for discussions with CNO, the Fleet, other Systems Commands, Program Executive Officers and Direct Reporting Program Manager and other services on 2M.

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SEA 0417 will serve as the chairperson of the CCB for the PRC-2000-2M System.

3.2.2 Crane Division, Naval Surface Warfare Center, Code 6038. Crane Division, Naval Surface Warfare Center, Code 6038 will provide technical assistance and support to the NAVSEA 2M Program as tasked by SEA 0417. Code 6038 will serve as the In-Service Engineering Agent (ISEA) for NAVSEA's 2M Program. As such, Code 6038, is the Configuration Manager, and point of contact for the PRC-2000-2M System. Code 6038 will also:

Procure and make initial distribution to those ships or activities which meet the requirements of NAVSEAINST 4790.17A and 2M Certification Plan, NAVSEA TE000-AA-PLN-010/2M.

Receive, review and evaluate all proposed Engineering Change Proposals (ECPs).

Maintain CCB membership.

Configuration control maintenance of the PRC-2000-2M System.

Approval/disapproval of all waivers and deviations.

Preparation of all audit plans to perform random verification of product configuration, both new procurements and current inventory, as appropriate, to meet Navy configuration management requirements.

3.2.3 Naval Inventory Control Point (NAVICP), Code 05914. As Program Support Inventory Control Point (PSICP), NAVICP, Code 05914 is responsible for developing and updating the Allowance Parts List (APL) for the PRC-2000-2M System (00032540). The APL is updated for two reasons: (1) to reflect configuration changes and (2) to base updated allowance lists on experienced support item replacement rates in lieu of provisioning estimates. The NAVICP, Code 05914 will also:

Perform allowance computations using approved allowance computation models to determine the support items (spare parts, repair parts, and support equipment) to be stocked and the quantities of each aboard ships and at shore stations.

Procure the items that they manage and submit Supply Support Requests (SSRs) to the cognizant Inventory Control Points (ICPs) for those items managed and supplied by Defense Logistics Agency (DLA) and other ICPs.

During outfitting, procure all new support items and requisition all other allowance list items from the other ICPs for delivery to the locations of the ships and shore stations.

4.0 CONFIGURATION MANAGEMENT PHASING AND MILESTONES

4.1 Program Phasing and Milestones. The current status of Life-Cycle configuration management of the PRC-2000-2M System (Concept Exploration and Definition (CE-D), Demonstration and Validation (D-V), Engineering and Manufacturing Development (E&MD), Production and Deployment (P&D), and Operation and Support (O&S)) is shown in FIGURE 2.

NAVSEA S9665-CY-ILS-010/PRC-2000/U

4.1.1 Concept Exploration and Definition (CE-D). The CE-D phase was Not Applicable (N/A), because the PRC-2000-2M System is a commercial off-the-shelf, Non-Developmental Item (NDI).

4.1.2 Demonstration and Validation (D-V). The D-V phase was also N/A, because the PRC-2000-2M System is a commercial off-the-shelf, NDI.

4.1.3 Engineering and Manufacturing Development (E&MD). During the E&MD, Low-Rate Initial Production (LRIP) phase, the 2M ISEA at NAVSURFWARCENDIV Crane (Technical Support Activity (TSA)) received the first five PRC-2000-2M Systems from PACE Incorporated on 14 November 1991. The 2M ISEA performed an evaluation (Development Test (DT)/Operational Test (OT)) of the PRC-2000-2M System on 24 January 1992. The evaluation determined that the PRC-2000 was capable of reliably performing all the repairs contained in A-100-0072, Miniature Electronics Repair, A-100-0073, Microminiature Electronics Repair, and Standard Maintenance Practices 2M Electronic Assembly Repair Manual

LIFE-CYCLE CONFIGURATION MANAGEMENT/PRC-2000-2M SYSTEM				
PHASE				
I		II		III
CE-D	D-V	E&MD (LRIP)	P&D	O&S
N/A	N/A	LOW-RATE INITIAL PRODUCTION (LRIP) DELIVERIES 14 NOV 91 DEVELOPMENT TEST/ OPERATIONAL TEST, 24 JAN 92 PCI, 29 JAN 93 (CONTRACT PROCUREMENT PACKAGE DEVELOPED)	PBL + APP CHGS = PRODUCT DWGS + C, D, & E SPECS, 1 OCT 93 (CONTRACT AWARDED TO PROCURE PRC-2000-2M SYSTEMS) FULL-RATE PRODUCTION DELIVERIES (FRP DELs) COMMENCED 21 JAN 94 PHYSICAL CONFIGURATION AUDIT (PCA), 25 MAY 94 (PROVISIONING CONFERENCE) CSA COMMENCED 31 DEC 94, (MICRO ISEA)	

FIGURE 2

NAVSEA S9665-CY-ILS-010/PRC-2000/U

(NAVSEA SE004-AK-TRS-010/2M). On 29 January 1993, the 2M ISEA submitted an Indefinite Delivery (ID)/Indefinite Quantity (IQ) contract procurement package to the contracting division at NAVSURWARCENDIV Crane for development and letting. This package included a technical specification (Product Configuration Identification (PCI)) and Provisioning Technical Documentation (PTD) requirements.

4.1.4 Production and Deployment (P&D). The contract to procure PRC-2000-2M Systems was awarded on 1 October 1993 by Defense General Supply Center (DGSC), DLA490-93-D-6081 refers. The PBL was verified during a Provisioning Conference (PCA) at PACE Incorporated on 25 May 1994. Representatives from the NAVICP (Program Support Inventory Control Point (PSICP)) and NAVSURFWARCENDIV Crane (ISEA) were on hand to verify that the "as built" (PBL) PRC-2000-2M System matched the technical specifications and PTD (product drawings and parts lists). The first delivery (FRP DELs) of PRC-2000-2M Systems was made to NAVSURFWARCENDIV Crane on 21 January 1995. As of 1 October 1995, a total of (311) units have been received. The fleet installation/outfitting schedule is provided in APPENDIX B of the PRC-2000-2M System Integrated Logistic Support Plan (ILSP) (S9665-CY-ILS-010/PRC-2000/U).

4.1.5 Operation and Support (O&S). Prior to fleet outfitting, it was determined that addition of the PRC-2000-2M System to the fleet inventory would not require additional personnel for operation. Current technical maintenance allowances for technical billets are sufficient for maintenance of the PRC-2000. Technician assignment for the 2M Work Station (PRC-2000-2M System) is a collateral duty. The 2M repair function is a duty performed by trained and certified technicians who are assigned a secondary Navy Enlisted Classification (NEC). As a result, there are billets identified specifically for 2M electronic repair technicians (NEC 9527/9526), inspectors (NEC 9503), and instructors (NEC 9509). Only 2M certified technicians with a minimum NEC of 9527, 9526, 9503, and/or 9509 may perform 2M repairs or operate the 2M equipment. The concept of supply support for the PRC-2000-2M System is aligned with the maintenance concept defined in paragraph 3.1. of the PRC-2000-2M System Integrated Logistic Support Plan (ILSP) (S9665-CY-ILS-010/PRC-2000/U). Consumable and repair/spare piece parts used to repair the PRC-2000 will be listed on APL 00032540.

5.0 DATA MANAGEMENT (N/A)

6.0 CONFIGURATION IDENTIFICATION

6.1 Functional Baseline. N/A, the PRC-2000-2M System is a commercial off-the-shelf, NDI. However, DGSC Richmond, Contract No. DLA490-93-D-6081, Section C, DGSC-STBC-93-28-1001 of 22 March 1993, Purchase Description/Specification for a 2M-SMT Rework System describes the PRC-2000's functional characteristics and the verification tests required to demonstrate the achievement of those specified functional characteristics.

6.2 Allocated Baseline. N/A, the PRC-2000-2M System is a commercial off-the-shelf, NDI.

6.3 Product Baseline (PBL). N/A, the PRC-2000-2M System is a commercial off-the-shelf, NDI. However, DGSC Richmond, Contract No. DLA490-93-D-6081, Section J, Exhibit A, DLA490-93-R-2242, CDRL A002, SPTD describes the PRC-2000-2M System parts and equipment in sufficient detail to verify the current equipment configuration and/or PBL. The SPTD also includes specifications, standards, drawings, sketches, descriptions, and the

NAVSEA S9665-CY-ILS-010/PRC-2000/U

necessary assembly and general arrangement drawings, schematic drawings, schematic diagrams, wiring and cable diagrams, etc., needed to indicate the physical characteristics, location, and function of the item(s) within the PRC-2000-2M System.

6.3.1 Specifications. DGSC Richmond, Contract No. DLA490-93-D-6081, Section C, DGSC-STBC-93-28-1001 of 22 March 1993, Purchase Description/Specification for a 2M-SMT Rework System is the PRC-2000-2M System hardware specification.

6.3.2 Drawings and Associated Lists. TABLE 2. lists applicable drawings for the PRC-2000-2M System.

TABLE 2 PRC-2000-2M SYSTEM DRAWING LIST

ITEM NUMBER	DRAWING NUMBER	TITLE
1	NAVSEA S9665-CY-OMP-010/ PRC-2000/U, Manual No. 5050-0344	Figure 22. PPS 400, Wiring Diagram
2	NAVSEA S9665-CY-OMP-010/ PRC-2000/U, Manual No. 5050-0344	Figure 23. Multifunction PCB Assembly Schematic
3	NAVSEA S9665-CY-OMP-010/ PRC-2000/U, Manual No. 5050-0344	Figure 24. Microprocessor PCB Assembly Schematic
4	NAVSEA S9665-CY-OMP-010/ PRC-2000/U, Manual No. 5050-0344	Figure 25. Display PCB Assembly Schematic
5	NAVSEA S9665-CY-OMP-010/ PRC-2000/U, Manual No. 5050-0344	Figure 26. Assembly Drawing
6	NAVSEA S9665-CY-OMP-010/ PRC-2000/U, Manual No. 5050-0344	Figure 26. and 27. Assembly Drawing
7	NAVSEA S9665-CY-OMP-010/ PRC-2000/U, Manual No. 5050-0344	Figure 28. Air Hose Routing
8	NAVSEA S9665-CY-OMP-010/ PRC-2000/U, Manual No. 5050-0344	Figure 29., 30., and 31. Power Source Replacement Parts
9	NAVSEA S9665-CY-OMP-010/ PRC-2000/U, Manual No. 5050-0365	Figure 7. HS 150 Parts Identification
10	NAVSEA S9665-CY-OMP-010/ PRC-2000/U, Manual No. 5050-0365	Figure 8. HS 150 PC Board

NAVSEA S9665-CY-ILS-010/PRC-2000/U

TABLE 2 PRC-2000-2M SYSTEM DRAWING LIST (Contd)

ITEM NUMBER	DRAWING NUMBER	TITLE
11	NAVSEA S9665-CY-OMP-010/ PRC-2000/U, Manual No. 5050-0373	Parts List

6.3.3 Configuration Identifiers. PACE Inc. provides identification tags with each delivered PRC-2000-2M System. The identification tags are attached to the rear of the Power Source, PPS-400 and Hot Spot, HS-150 and contain the following information:

Power Source, PPS-400

Model Number - PPS-400
Serial Number - XX-XX-XXXX
Part Number - 7008-0187

Contract Number
National Stock Number (NSN) - 3439-01-415-4165
PACE Part Number - 8007-0161
1 year warranty

Hot Spot, HS-150

Serial Number - XXXX
Part Number - 7040-0002

7.0 INTERFACE MANAGEMENT (N/A)

8.0 CONFIGURATION CONTROL

8.1 Responsibilities. The 2M ISEA is responsible for configuration control of the PRC-2000-2M System. CI changes are accomplished through formal change control procedures contained in MIL-STD-973, Configuration Management. PACE Inc., manufacturer of the PRC-2000, shall notify the 2M ISEA of all changes, whether of a production or modification type, which are approved for incorporation into the PRC-2000 or its supporting equipment, (see DGSC Richmond, Contract No. DLA490-93-D-6081, Section J, Exhibit A, DLA490-93-R-2242, Attachment Number 7 and 9, Design Change Notice).

8.2 Procedures. 2M ISEA initiated configuration changes of the PRC-2000-2M System are accomplished through the EC process. Reports from the fleet reflecting technical manual and hardware discrepancies are the prime motivators of EC development. User feedback reports provide the means for the fleet to report equipment field operation shortfalls which affect the equipment's reliability, operational availability, and program objectives.

8.2.1 Technical Manuals (TM). TM changes requested by users are reported on a Technical Manual Deficiency/Evaluation Report (TMDER), NAVSEA 4160/1, in accordance with NAVSEA S0005-AA-GYD-030/TMMP and NAVSEAINST 4160.3 (see FIGURE 3). A TMDER, obtained from the back of the TM (NAVSEA S9665-CY-OMP-010/PRC-2000/U), is a dedicated form for documentation problems only, with unique data elements to support documentation problem reporting. The Naval Sea Data Support Activity (NSDSA) at Naval Surface Warfare Center, Port Hueneme Division, tracks the TMDER in the processing loop. NSDSA routes documentation problems to the 2M ISEA. Other changes to TMs and engineering drawings will be coordinated

between the manufacturer (PACE Inc.) and the 2M ISEA. The 2M ISEA will disseminate all changes to each operating site, in accordance with the NAVSEA Technical Manual Management Program (TMMP) (S0005-AA-PRO-010/TMMP).

8.2.2 Hardware. OPNAV 4790/2K (2-KILO) (FIGURE 4) is a dedicated form for reporting hardware problems under the 3-M system in accordance with OPNAVINST 4790.4C. The 2M ISEA responds to problems reported on 2-KILOs. The 2M ISEA also responds to PMS FBRs reported on OPNAV 4790.7B (FIGURE 5) and configuration changes reported on OPNAV 4790/CKs (FIGURE 6). Ship and shore units also report the installation of the PRC-2000-2M System on a Ship's Configuration Change (OPNAV 4790/CK) form (FIGURE 6).

8.2.3 Research and Development. Inputs are initiated by the 2M ISEA to reflect modification requirements developed from equipment test and evaluations, equipment modernization programs, and 2M ISEA research and development efforts.

8.3 Engineering Change Proposal. An ECP is a proposed engineering change and the documentation by which the change is described, justified, and submitted to the Government for approval or disapproval. The 2M ISEA prepares ECPs for the PRC-2000-2M System. The ECP is developed and prepared using DD Form 1692 in accordance with Appendix D of MIL-STD-973. A sample DD Form 1692 is shown in FIGURE 7.

NAVSEA S9665-CY-ILS-010/PRC-2000/U

(Insert Classif of TMDER Here and At Bottom of Page) CLASSIFICATION.

NAVSEA (USER) TECHNICAL MANUAL DEFICIENCY/EVALUATION REPORT (TMDER) (NAVSEA S0005-AA-GYD-030/TMMP & NAVSEAINST 4160.3A)					
<i>INSTRUCTION Continue on 8-1/2" x 11" paper if additional space is needed</i>					
1 USE THIS REPORT TO INDICATE DEFICIENCIES, PROBLEMS AND RECOMMENDATIONS RELATING TO PUBLICATION 2 BLOCKS MARKED WITH "*" ARE TO BE FILLED IN BY THE CONTRACTOR BEFORE PRINTING 3 FOR UNCLASSIFIED TMDERS, FILL IN YOUR RETURN ADDRESS IN SPACE PROVIDED ON THE BACK FOLD AND TAPE WHERE INDICATED AND MAIL (SEE OPNAVINST 5510.1H FOR MAILING CLASSIFIED TMDERS) 4 FOR ADDITIONAL INFORMATION, CALL AUTOVON 551-2970/2968 OR COMMERCIAL 805-982-2970/2968					
1 NAVSEA TECHNICAL MANUAL NO *		2 VOL PART*	3 TITLE*		
4 REV NO/DATE OR TM CH NO/DATE		5 SYSTEM/EQUIPMENT NOMENCLATURE		6 SYSTEM/EQUIPMENT IDENTIFICATION/(MK/MOD/AN/PART NO)	
7 USER'S EVALUATION OF MANUAL (Check Appropriate Blocks)					
A EXCELLENT	B GOOD	C FAIR	D POOR	E COMPLETE	F INCOMPLETE
8 GENERAL COMMENTS					
9 RECOMMENDED CHANGES TO PUBLICATION					
PAGE NO A	PARA-GRAPH B	LINE NO C	FIG. NO D	TABLE E	F RECOMMENDED CHANGES AND REASONS TYPE OF PROBLEM (INDICATE SAFETY (S), MAJOR (M), OR MINOR (P))
10 ORIGINATOR'S NAME AND WORK CENTER <i>(Please Print)</i>			11 SIGNATURE OF 3-M COORDINATOR		12 DATE SIGNED
13 AUTOVON/COMM NO					
14 SHIP HULL NO AND/OR STATION ADDRESS (DO NOT ABBREVIATE)					
15 THIS SPACE ONLY FOR NSDSA					
A CONTROL NO	B COG ISEA	C DATE		D PRIORITY	E TRANSMITTED TO
		RECEIVED	FORWARDED	DUE	

NAVSEA 4160/1 (Rev 10-89) (FRONT) (REPLACES NAVSEA 9086/10 DESTROY STOCK)

FIGURE 3

NAVSEA S9665-CY-ILS-010/PRC-2000/U

PLEASE CLIP WITH TAPE DO NOT STAPLE THANK YOU

DEPARTMENT OF THE NAVY

=====
Official Business
PENALTY FOR PRIVATE USE, \$300

PLACE
POSTAGE
HERE

FIRST CLASS MAIL

COMMANDING OFFICER
NAVAL SHIP WEAPON SYSTEMS ENGINEERING STATION
NAVAL SEA DATA SUPPORT ACTIVITY (Code 5H00)
PORT HUENEME, CA 93043-5007

FOLD HERE

NAVSEA 41807 5-88 (BACK)

FIGURE 3 (Contd)

SEE INSTRUCTIONS ON BACK OF GREEN PAGE	
FROM (SHIP NAME AND HULL NUMBER)	SERIAL #
	DATE
TO	
<input type="checkbox"/> NAVAL SEA SUPPORT CENTER _____ (Category A)	
<input type="checkbox"/> TYPE COMMANDER (Category B)	
SUBJECT PLANNED MAINTENANCE SYSTEM FEEDBACK REPORT	
SYSTEM, SUB SYSTEM OR COMPONENT	APL/CID/AN NO /MK MOD
SYSCOM MIP CONTROL NUMBER	SYSCOM MRC CONTROL NUMBER
DESCRIPTION OF PROBLEM	
CATEGORY A	CATEGORY B
<input type="checkbox"/> MIP/MRC REPLACEMENT	<input type="checkbox"/> TECHNICAL
	<input type="checkbox"/> TYCOM ASSISTANCE
	<input type="checkbox"/> OTHER (Specify)
REMARKS	
ORIGINATOR & WORK CENTER CODE	DIV OFFICER
DEPT HEAD	3 M COORDINATOR
Originator do not write below. For TYCOM use only	
TYCOM <input type="checkbox"/> CONCUR <input type="checkbox"/> DO NOT CONCUR <input type="checkbox"/> TAKES ACTION <input type="checkbox"/> PASSES FOR ACTION	
TYCOM REP SIGNATURE	DATE
OPNAV 4790/7B (Rev 3-84) ACTION COPY PAGE ____ OF ____ S/N 0107-LF-047-9038	

FIGURE 5

NAVSEA S9665-CY-ILS-010/PRC-2000/U

SHIP'S CONFIGURATION CHANGE FORM

OPNAV 4790/CK(5-84)

S/N 0107-LF-047-9001

CONFIG FILE CORR

COMP I/A NO DEFL

COMP DEFL

SECTION I JOB IDENTIFICATION

JOB CONTROL NUMBER			ALTERATION IDENTIFICATION			
1 SHIP'S UIC	2 WORK CENTER	3 JOB SEQ NR	4 ALTERATIONS (SHIPALT PLD CHG ETC)			
A. SHIP'S NAME		B. HULL NUMBER		C. EIC		D. ACT TRM
7. EQUIPMENT NOUN NAME			8. S/F MHRS EXP	9. ACT MAINT TIME	10. COMP DATE	11. W/R

SECTION II JOB DESCRIPTION/REMARKS

12. JOB DESCRIPTION/REMARKS

SECTION III COMPONENT CONFIGURATION CHANGE IDENTIFICATION

13. COMPONENT NOUN NAME			14. QUANTITY	15. CA
16. COMPONENT IDENTIFICATION		17. COMPONENT SERIAL NUMBER		
18. COMPONENT APL/AEL		19. LOCATION (DECK/FRAME/SIDE)		20. EIC
21. NEXT HIGHER ASSEMBLY			22. S A C	23. WORK CENTER
24. NAMEPLATE DATA				
25. MIP			26. EOSS	
27. TM				

SECTION IV SPECIAL PURPOSE

28. RIN	29. AILSIN	30. SECAR OFFICE USE
---------	------------	----------------------

—INSTRUCTIONS—

ITEM NUMBER	SECTION I & II DESCRIPTION	SECTION I & II			LEGEND		
		PAGE 1	CONT	PAGE			
1	JOB CONTROL NUMBER	M		M	IA IF AVAILABLE	O OPTIONAL	
4	ALTERATION IDENTIFICATION	IP		IP	IP IF APPLICABLE	NR NOT REQUIRED	
5	EQUIPMENT IDENTIFICATION CODE	M		NR	M MANDATORY		
6	ACTION TAKEN	M		NR			
7	EQUIPMENT NOUN NAME	M		NR			
8	SHIP'S FORCE MANHOURS EXPENDED	M		NH	SECTION I BLOCK 8 ACTION TAKEN	SECTION III BLOCK 15 COMPONENT ACTION	
9	ACTIVE MAINTENANCE TIME	M		NR			
10	COMPLETION DATE	M		NR			
11	METER READING	IP		NR			
12	JOB DESCRIPTION (REMARKS)	O		NR			
13	COMPONENT NOUN NAME	M		M	5A — PARTIALLY COMPLETED ALTERATION	R — REMOVED EQUIPMENT	
14	QUANTITY	M		M	5B — FULLY COMPLETED ALTERATION	I — INSTALLED EQUIPMENT	
15	COMPONENT ACTION	M		M	5C — FULLY COMPLETED EQUIVALENT TO ALTERATION	M — MODIFIED EQUIPMENT	
16	COMPONENT IDENTIFICATION	IP		IP	5D — ALTERATION DIRECTIVE NOT APPLICABLE	CONFIG FILE CORR NO MAINTENANCE ACTION	
17	COMPONENT SERIAL NUMBER	IA		IA	1 — MAINTENANCE ACTION COMPLETED PARTS DRAWN FROM SUPPLY	A — ADDITION OF RECORD	
18	COMPONENT APL/AEL	M		IA	2 — MAINTENANCE ACTION COMPLETED REQUIRED PARTS NOT DRAWN FROM SUPPLY (LOCAL MANUFACTURE PRE EXPENDED BINS)	D — DELETION OF RECORD	
19	LOCATION	M		M	3 — MAINTENANCE ACTION COMPLETED NO PARTS REQUIRED	C — CORRECT/CHANGE EXISTING RECORD	
20	EQUIPMENT IDENTIFICATION CODE	NR		IA			
21	NEXT HIGHER ASSEMBLY	IP		IP			
22	SERVICE APPLICATION CODE	IA		IA			
23	WORK CENTER	NR		M			
24	NAMEPLATE DATA	NR		M			
25	MAINTENANCE INDEX PAGE	IA		IA			
26	EOSS	IP		IP			
27	TECH MANUAL NUMBER	IA		IA			
WORK CENTER SUPERVISOR		DIVISION OFF		SUPPLY DEPT		3 M COORDINATOR	
SHIP SEQUENCE NUMBER						PAGE _____ OF _____	

NO S I PO 1988-640-002/80089

FIGURE 6

ENGINEERING CHANGE PROPOSAL (ECP), PAGE 1				1 DATE (YYMMDD)		Form Approved OMB No 0704 0188	
<small>Public reporting burden for this collection of information is estimated to average 2 hours per response including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed and completing and reviewing the collection of information. Send comments regarding this burden estimate or any other aspect of this collection of information, including suggestions for reducing this burden to Department of Defense, Washington Headquarters Services, Directorate for Information Operations and Reports, 1215 Jefferson Davis Highway, Suite 1204, Arlington, VA 22202-4302, and to the Office of Management and Budget, Paperwork Reduction Project (0704-0188), Washington, DC 20503.</small> PLEASE DO NOT RETURN YOUR COMPLETED FORM TO EITHER OF THESE ADDRESSES. RETURN COMPLETED FORM TO THE GOVERNMENT ISSUING CONTRACTING OFFICER FOR THE CONTRACT / PROCURING ACTIVITY NUMBER LISTED IN ITEM 2 OF THIS FORM.						2 PROCURING ACTIVITY NO	
						3 DODAAC	
4 ORIGINATOR		b ADDRESS (Street, City, State Zip Code)		5 CLASS OF ECP			
a TYPED NAME (First, Middle Initial Last)				6 JUST CODE		7 PRIORITY	
8 ECP DESIGNATION			9 BASELINE AFFECTED				
a MODEL / TYPE	b CAGE CODE	c SYSTEM DESIGNATION		<input type="checkbox"/> FUNCTIONAL	<input type="checkbox"/> PRODUCT		
				<input type="checkbox"/> ALLOCATED			
d ECP NO			e TYPE	f REV	10 OTHER SYS / CONFIG ITEMS AFFECTED		
					<input type="checkbox"/> YES	<input type="checkbox"/> NO	
11 SPECIFICATIONS AFFECTED				12 DRAWINGS AFFECTED			
	CAGE Code	Specification /Document No	Rev	SCN	CAGE Code	Number	Rev
a SYSTEM							
b DEVELOPMENT							
c PRODUCT							
13 TITLE OF CHANGE							
14 CONTRACT NO AND LINE ITEM				15 PROCURING CONTRACTING OFFICER			
				a NAME (First Middle Initial Last)			
				b CODE		c TELEPHONE NO	
16 CONFIGURATION ITEM NOMENCLATURE						17 IN PRODUCTION	
						<input type="checkbox"/> YES	<input type="checkbox"/> NO
18 ALL LOWER LEVEL ITEMS AFFECTED							
a NOMENCLATURE			b PART NO		c NSN		
19 DESCRIPTION OF CHANGE							
20 NEED FOR CHANGE							
21 PRODUCTION EFFECTIVITY BY SERIAL NUMBER				22 EFFECT ON PRODUCTION DELIVERY SCHEDULE			
23 RETROFIT							
a RECOMMENDED ITEM EFFECTIVITY				b SHIP /VEHICLE CLASS AFFECTED			
c ESTIMATED KIT DELIVERY SCHEDULE				d LOCATIONS OR SHIP /VEHICLE NUMBERS AFFECTED			
24 ESTIMATED COSTS /SAVINGS UNDER CONTRACT				25 ESTIMATED NET TOTAL COSTS /SAVINGS			
26 SUBMITTING ACTIVITY				b TITLE			
a AUTHORIZED SIGNATURE							
27 APPROVAL /DISAPPROVAL							
a CLASS I		b CLASS II		c CLASS II		DO NOT CONCUR IN CLASSIFICATION OF CHANGE	
<input type="checkbox"/> APPROVAL RECOMMENDED	<input type="checkbox"/> DISAPPROVAL RECOMMENDED	<input type="checkbox"/> APPROVED	<input type="checkbox"/> DISAPPROVED	<input type="checkbox"/> CONCUR IN CLASSIFICATION OF CHANGE	<input type="checkbox"/> DO NOT CONCUR IN CLASSIFICATION OF CHANGE		
d GOVERNMENT ACTIVITY			e SIGNATURE			f DATE SIGNED (YYMMDD)	
g APPROVAL	h GOVERNMENT ACTIVITY			i SIGNATURE		j DATE SIGNED (YYMMDD)	
<input type="checkbox"/> APPROVED							
<input type="checkbox"/> DISAPPROVED							

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FIGURE 7

NAVSEA S9665-CY-ILS-010/PRC-2000/U

ENGINEERING CHANGE PROPOSAL (ECP), PAGE 2		Form Approved OMB No 0704 0188
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PLEASE DO NOT RETURN YOUR COMPLETED FORM TO EITHER OF THESE ADDRESSES. RETURN COMPLETED FORM TO THE GOVERNMENT ISSUING CONTRACTING OFFICER FOR THE CONTRACT/PROCURING ACTIVITY NUMBER LISTED IN ITEM 2 OF THE COMPLETED DD FORM 1692.		ECP NUMBER
EFFECTS ON FUNCTIONAL/ALLOCATED CONFIGURATION DOCUMENTATION		
28 OTHER SYSTEMS AFFECTED	29 OTHER CONTRACTORS/ACTIVITIES AFFECTED	
30 CONFIGURATION ITEMS AFFECTED		
31 EFFECTS ON PERFORMANCE ALLOCATIONS AND INTERFACES IN SYSTEM SPECIFICATION		
32 EFFECTS ON EMPLOYMENT, INTEGRATED LOGISTICS SUPPORT, TRAINING, OPERATIONAL EFFECTIVENESS OR SOFTWARE		
33 EFFECTS ON CONFIGURATION ITEM SPECIFICATIONS		
34 DEVELOPMENTAL REQUIREMENTS AND STATUS		
35 TRADE-OFFS AND ALTERNATIVE SOLUTIONS		
36 DATE BY WHICH CONTRACTUAL AUTHORITY IS NEEDED (YYMMDD)		

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FIGURE 7 (Contd)

NAVSEA S9665-CY-ILS-010/PRC-2000/U

ENGINEERING CHANGE PROPOSAL (ECP), PAGE 3					Form Approved OMB No. 0704-0188		
Public reporting burden for this collection of information is estimated to average 2 hours per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. Send comments regarding this burden estimate or any other aspect of this collection of information, including suggestions for reducing this burden, to Department of Defense, Washington Headquarters Services, Directorate for Information Operations and Reports, 1215 Jefferson Davis Highway, Suite 1204, Arlington, VA 22202-4302, and to the Office of Management and Budget, Paperwork Reduction Project (0704-0188), Washington, DC 20503.							
PLEASE DO NOT RETURN YOUR COMPLETED FORM TO EITHER OF THESE ADDRESSES. RETURN COMPLETED FORM TO THE GOVERNMENT ISSUING CONTRACTING OFFICER FOR THE CONTRACT/PROCURING ACTIVITY NUMBER LISTED IN ITEM 2 OF THE COMPLETED DD FORM 1692.						ECP NUMBER	
EFFECTS ON PRODUCT CONFIGURATION DOCUMENTATION, LOGISTICS AND OPERATIONS							
(X)	FACTOR	ENCL.	PAR.	(X)	FACTOR	ENCL.	PAR.
	37. EFFECT ON PRODUCT CONFIGURATION DOCUMENTATION OR CONTRACT				39. EFFECT ON OPERATIONAL EMPLOYMENT		
	a. PERFORMANCE				a. SAFETY		
	b. WEIGHT-BALANCE-STABILITY (Aircraft)				b. SURVIVABILITY		
	c. WEIGHT-MOMENT (Other equipment)				c. RELIABILITY		
	d. CDRL, TECHNICAL DATA				d. MAINTAINABILITY		
	e. NOMENCLATURE				e. SERVICE LIFE		
					f. OPERATING PROCEDURES		
	38. EFFECT ON INTEGRATED LOGISTICS SUPPORT (ILS) ELEMENTS				g. ELECTROMAGNETIC INTERFERENCE		
	a. ILS PLANS				h. ACTIVATION SCHEDULE		
	b. MAINTENANCE CONCEPT, PLANS AND PROCEDURES				i. CRITICAL SINGLE POINT FAILURE ITEMS		
	c. LOGISTICS SUPPORT ANALYSES				j. INTEROPERABILITY		
	d. INTERIM SUPPORT PROGRAMS						
	e. SPARES AND REPAIR PARTS				40. OTHER CONSIDERATIONS		
	f. TECH MANUALS/PROGRAMMING TAPES				a. INTERFACE		
	g. FACILITIES				b. OTHER AFFECTED EQUIPMENT/GFE/GFP		
	h. SUPPORT EQUIPMENT				c. PHYSICAL CONSTRAINTS		
	i. OPERATOR TRAINING				d. COMPUTER PROGRAMS AND RESOURCES		
	j. OPERATOR TRAINING EQUIPMENT				e. REWORK OF OTHER EQUIPMENT		
	k. MAINTENANCE TRAINING				f. SYSTEM TEST PROCEDURES		
	l. MAINTENANCE TRAINING EQUIPMENT				g. WARRANTY / GUARANTEE		
	m. CONTRACT MAINTENANCE				h. PARTS CONTROL		
	n. PACKAGING, HANDLING, STORAGE, TRANSPORTABILITY				i. LIFE CYCLE COSTS		
41. ALTERNATE SOLUTIONS							
42. DEVELOPMENTAL STATUS							
43. RECOMMENDATIONS FOR RETROFIT							
44. WORK-HOURS PER UNIT TO INSTALL RETROFIT KITS				45. WORK-HOURS TO CONDUCT SYSTEM TESTS AFTER RETROFIT			
a. ORGANIZATION	b. INTERMEDIATE	c. DEPOT	d. OTHER				
46. THIS CHANGE MUST BE ACCOMPLISHED				47. IS CONTRACTOR FIELD SERVICE ENGINEERING REQUIRED?		48. OUT OF SERVICE TIME	
<input type="checkbox"/> BEFORE	<input type="checkbox"/> WITH	<input type="checkbox"/> AFTER THE FOLLOWING CHANGES		<input type="checkbox"/> YES	<input type="checkbox"/> NO		
49. EFFECT OF THIS ECP AND PREVIOUSLY APPROVED ECP'S ON ITEM				50. DATE CONTRACTUAL AUTHORITY NEEDED FOR (YYMMDD)			
				a. PRODUCTION			
				b. RETROFIT			

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FIGURE 7 (Contd)

NAVSEA S9665-CY-ILS-010/PRC-2000/U

ENGINEERING CHANGE PROPOSAL (ECP), PAGE 4					Form Approved OMB No. 0704-0188	
Public reporting burden for this collection of information is estimated to average 2 hours per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. Send comments regarding this burden estimate or any other aspect of this collection of information, including suggestions for reducing this burden, to Department of Defense, Washington Headquarters Services, Directorate for Information Operations and Reports, 1215 Jefferson Davis Highway, Suite 1204, Arlington, VA 22202-4302, and to the Office of Management and Budget, Paperwork Reduction Project (0704-0188), Washington, DC 20503.						
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51. ESTIMATED NET TOTAL COST IMPACT (Use parentheses for savings)						
FACTOR	COSTS / SAVINGS UNDER CONTRACT				Total (e)	Other Costs/ Savings to the Government (f)
	Non- Recurring (a)	Unit (b)	Quantity (c)	RECURRING Total (Recurring) (d)		
a. PRODUCTION COSTS / SAVINGS						
(1) CONFIGURATION ITEM / CSCI						
(2) FACTORY TEST EQUIPMENT						
(3) SPECIAL FACTORY TOOLING						
(4) SCRAP						
(5) ENGINEERING, ENGINEERING DATA REVISION						
(6) REVISION OF TEST PROCEDURES						
(7) QUALIFICATION OF NEW ITEMS						
(8) SUBTOTAL OF PROD COSTS / SAVINGS						
b. RETROFIT COSTS						
(1) ENGINEERING DATA REVISION						
(2) PROTOTYPE TESTING						
(3) KIT PROOF TESTING						
(4) RETROFIT KITS FOR OPERATIONAL SYSTEMS						
(5) PREP OF MWO / TCTO / SC / ALT / TD						
(6) SPECIAL TOOLING FOR RETROFIT						
(7) INSTALLATION - CONTRACTOR PERSONNEL						
(8) INSTALLATION - GOVERNMENT PERSONNEL						
(9) TESTING AFTER RETROFIT						
(10) MODIFICATION OF GFE / GFP						
(11) QUALIFICATION OF GFE / GFP						
(12) SUBTOTAL OF RETROFIT COSTS / SAVINGS						
c. INTEGRATED LOGISTICS SUPPORT COSTS / SAVINGS						
(1) SPARES / REPAIR PARTS REWORK						
(2) NEW SPARES AND REPAIR PARTS						
(3) SUPPLY / PROVISIONING DATA						
(4) SUPPORT EQUIPMENT						
(5) RETROFIT KITS FOR SPARES						
(6) OPERATOR TRAINING COURSES						
(7) MAINTENANCE TRAINING COURSES						
(8) REVISION OF TECH MANUALS						
(9) NEW TECH MANUALS						
(10) TRAINING / TRAINERS						
(11) INTERIM SUPPORT						
(12) MAINTENANCE MANPOWER						
(13) COMPUTER PROGRAMS / DOCUMENTATION						
(14) SUBTOTAL OF ILS COSTS / SAVINGS						
d. OTHER COSTS / SAVINGS						
e. SUBTOTAL COSTS / SAVINGS						
(1) SUBTOTAL UNDER CONTRACT						
f. COORDINATION OF CHANGES WITH OTHER CONTRACTORS						
g. COORDINATION CHANGES BY GOVERNMENT						
h. ESTIMATED NET TOTAL COSTS / SAVINGS						

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FIGURE 7 (Contd)

ENGINEERING CHANGE PROPOSAL (ECP), PAGE 5			Form Approved OMB No. 0704-0188		
<small>Public reporting burden for this collection of information is estimated to average 2 hours per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. Send comments regarding this burden estimate or any other aspect of this collection of information, including suggestions for reducing this burden, to Department of Defense, Washington Headquarters Services, Directorate for Information Operations and Reports, 1215 Jefferson Davis Highway, Suite 1204, Arlington, VA 22202-4302, and to the Office of Management and Budget, Paperwork Reduction Project (0704-0188), Washington, DC 20503.</small>					
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52. ESTIMATED COSTS / SAVINGS SUMMARY, RELATED ECP'S (Use parentheses for savings)					
	CAGE CODE (a)	ECP NUMBER (b)	COSTS / SAVINGS UNDER CONTRACTS (c)	OTHER COSTS / SAVINGS TO GOVERNMENT (d)	
a. PRODUCTION COSTS / SAVINGS (Subtotal of Costs / Savings Elements from Page 4, Item 4 a., applicable to aircraft, ship, tank, vehicle, missile or its subsystem)					
(1) SUBTOTAL PRODUCTION COSTS / SAVINGS					
b. RETROFIT COSTS (Applicable to aircraft, ship, tank, vehicle, missile or its subsystem)					
(1) SUBTOTAL RETROFIT COSTS					
c. INTEGRATED LOGISTICS SUPPORT COSTS / SAVINGS REVISED REQUIREMENTS					
(1) ITEM RETROFIT (If not covered under "b") (Applicable to aircraft, ship, tank, vehicle, missile or its subsystem)					
(2) ILS SUBTOTAL (Applicable to aircraft, ship, tank, vehicle, missile or its subsystem)					
(3) OPERATOR TRAINER (Net total cost / saving from each ECP covering operator trainer)					
(4) MAINTENANCE TRAINER (Net total cost / saving from each ECP covering maintenance trainer)					
(5) OTHER TRAINING EQUIPMENT					
(6) SUPPORT EQUIPMENT (Net total cost / saving from each ECP on support equipment)					
(7) ILS PLANS					
(8) MAINTENANCE CONCEPT, PLANS, SYSTEM DOCUMENTS					
(9) INTERIM SUPPORT PLAN					
NEW REQUIREMENTS	CAGE CODE	NON-RECURRING COSTS	RECURRING COSTS		
			UNIT	QTY	TOTAL
(10) PROVISIONING DOCUMENTATION					
(11) OPER TRNR / TRNG DEVICES / EQUIP					
(12) MANUALS / SPARES, REPAIR PARTS (For (11))					
(13) MAINTENANCE TRNR / TRNG DEVICES / EQUIPMENT					
(14) MANUALS / SPARES, REPAIR PARTS (For (13))					
(15) SUPPORT EQUIPMENT					
(16) MANUALS (For (15))					
(17) PROVISIONING DOCUMENTATION (For (15))					
(18) REPAIR PARTS (For (15))					
(19) SUBTOTAL ILS COSTS / SAVINGS (Sum of c.(1) through c.(18))					
d. OTHER COSTS / SAVINGS (Total from Page 4, Item 4 d., or related ECP's)					
(1) TOTAL OTHER COSTS / SAVINGS					
(2) SUBTOTALS OF COLUMNS					
(3) SUBTOTAL UNDER CONTRACT					
e. ESTIMATED NET TOTAL COSTS / SAVINGS (a + b + c - d)					

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FIGURE 7 (Contd)

NAVSEA S9665-CY-ILS-010/PRC-2000/U

ENGINEERING CHANGE PROPOSAL (ECP) (HARDWARE), PAGE 6		Form Approved OMB No 0704 0188	
Public reporting burden for this collection of information is estimated to average 2 hours per response including the time for reviewing instructions searching existing data sources gathering and maintaining the data needed and completing and reviewing the collection of information Send comments regarding this burden estimate or any other aspect of this collection of information including suggestions for reducing this burden to Department of Defense Washington Headquarters Services Directorate for Information Operations and Reports 1215 Jefferson Davis Highway Suite 1204 Arlington VA 22202-4302 and to the Office of Management and Budget Paperwork Reduction Project (0704 0188) Washington DC 20503		ECP NUMBER	
PLEASE DO NOT RETURN YOUR COMPLETED FORM TO EITHER OF THESE ADDRESSES RETURN COMPLETED FORM TO THE GOVERNMENT ISSUING CONTRACTING OFFICER FOR THE CONTRACT / PROCURING ACTIVITY NUMBER LISTED IN ITEM 2 OF THE COMPLETED DD FORM 1692		53 CAGE CODE	
54 CONFIGURATION ITEM NOMENCLATURE		55 TITLE OF CHANGE	
56 DATE AUTHORIZATION TO PROCEED RECEIVED BY CONTRACTOR (YYMMDD) → ▼		<input type="checkbox"/> START DELIVERY <input type="checkbox"/> COMPLETE DELIVERY ▼ PROGRESS POINT	
NO OF MONTHS		1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36	
a CONFIGURATION ITEM	(1) Production		
	(2) Tech Manuals		
	(3) Retrofit		
	(4) MWO / TCTO / SC / ALT / TD		
	(5) Spares / Repair Parts		
b SUPPORT EQUIPMENT	(1) Production		
	(2) Tech Manuals / Prog Tapes		
	(3) Retrofit		
	(4) MWO / TCTO / SC / ALT / TD		
	(5) Repair Parts		
c TRAINER	(1) Operator		
	(2) Maintenance		
NO OF MONTHS		1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36	

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FIGURE 7 (Contd)

NAVSEA S9665-CY-ILS-010/PRC-2000/U

ENGINEERING CHANGE PROPOSAL (ECP) (SOFTWARE), PAGE 7		Form Approved OMB No 0704 0188																																						
Public reporting burden for this collection of information is estimated to average 2 hours per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. Send comments regarding this burden estimate or any other aspect of this collection of information, including suggestions for reducing this burden, to Department of Defense, Washington Headquarters Services, Directorate for Information Operations and Reports, 1215 Jefferson Davis Highway, Suite 1204, Arlington, VA 22202-4302, and to the Office of Management and Budget, Paperwork Reduction Project (0704-0188), Washington, DC 20503.		ECP NUMBER																																						
PLEASE DO NOT RETURN YOUR COMPLETED FORM TO EITHER OF THESE ADDRESSES. RETURN COMPLETED FORM TO THE GOVERNMENT ISSUING CONTRACTING OFFICER FOR THE CONTRACT/PROCURING ACTIVITY NUMBER LISTED IN ITEM 2 OF THE COMPLETED DD FORM 1692.		57 CAGE CODE																																						
58 COMPUTER SOFTWARE ITEM NOMENCLATURE		59 TITLE OF CHANGE																																						
60 DATE AUTHORIZATION TO PROCEED RECEIVED BY CONTRACTOR (YYMMDD) → ▼		<input type="checkbox"/> START DELIVERY <input type="checkbox"/> COMPLETE DELIVERY ▼ PROGRESS POINT																																						
	NO OF MONTHS	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36			
a CONFIGURATION ITEM	(1) Software Engineering																																							
	(2) Software Documentation																																							
	(3) Software Replication																																							
	(4) Software Distribution																																							
b SUPPORT EQUIPMENT	(1) Software Engineering Environment Upgrade																																							
	(2) Software Test Environment Upgrade																																							
c TRAINER	(1) Operator																																							
	(2) Maintenance																																							
	NO OF MONTHS	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36			

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FIGURE 7 (Contd)

NAVSEA S9665-CY-ILS-010/PRC-2000/U

8.3.1 Engineering Change Proposal Preparation. When directed and funded by the 2M Program Manager, SEA 0417, the 2M ISEA assumes responsibility for ECP preparation. The ECP shall contain, at a minimum, a description of the change for each identified alternative; a technical feasibility evaluation; cost estimates for one-time and recurring costs; scheduling for development, procurement, delivery, and installation; and a preliminary assessment of the impact of each alternative on ILS elements. The 2M ISEA submits the ECP to the 2M Program Manager. Under the direction of the CCB, (2M Program Manager/2M ISEA), the change proposal is then subjected to a series of reviews which lead to either the rejection or the approval of the proposed change for further development.

8.3.2 Engineering Change Proposal Class. ECPs are designated as either Class I or Class II ECs. A **Class I** EC is one which affects a CI change in:

Performance.

Reliability, maintainability or survivability.

Weight, balance, moment of inertia.

Interface characteristics.

Electromagnetic characteristics.

Other technical requirements in the specifications.

A Class I EC is also one in which a change to the CI impacts:

Government Furnished Equipment (GFE).

Safety.

Compatibility or specified interoperability with interfacing CIs, support equipment or support software, spares, trainers or training devices/equipment/software.

Configuration to the extent that retrofit action is required.

Delivered operation and maintenance manuals for which adequate change/revision funding is not provided in existing contracts.

Preset adjustments or schedules affecting operating limits or performance to such extent as to require assignment of a new identification number.

Interchangeability, substitutability, or replaceability as applied to CIs, and to all subassemblies and parts except the pieces and parts of non-repairable subassemblies.

Sources of CIs or repairable items at any level defined by source-control drawings.

Skills, or manning, training, biomedical factors or human-engineering design.

Finally, a Class I EC is also one in which any one of the following contractual factors are affected:

Cost to the Government including incentives and fees.

Contract guarantees or warranties; contractual deliveries; scheduled contract milestones.

An engineering change which impacts none of the Class I factors specified above is classified as a **Class II** engineering change. DD Form 1692 (Page 1), Appendix D of MIL-STD-973 shall be used as the format for submittal of Class II engineering changes.

8.4 Processing of Requests for Deviations and Waivers. N/A, the PRC-2000-2M System is a commercial off-the-shelf, NDI.

8.5 Processing of Specification Change Notices (SCNs). N/A, the PRC-2000-2M System is a commercial off-the-shelf, NDI.

8.6 Processing of Notices of Revision (NORs). N/A, the PRC-2000-2M System is a commercial off-the-shelf, NDI.

9.0 CONFIGURATION STATUS ACCOUNTING (CSA)

9.1 General. Configuration Status Accounting (CSA) records the evolving configuration of the PRC-2000-2M System and comprises approved ECPs, alterations and change implementations. The configuration is identified and recorded throughout its life cycle. The 2M ISEA provides the following CSA services:

Support the acquisition process.

Know current configuration.

Provide the basis for logistic support to the fleet.

Provide data on proposed and implemented changes.

Performs status accounting for approved changes to CIs.

Update current configuration identification to support reprourement.

Maintains CI drawings for the PRC-2000-2M System.

Tracks unit locations and revision levels of units via the CSA database (MICRO ISEA).

9.2 CSA Database. CSA tracking of the PRC-2000-2M System is being performed on the MICRO ISEA database at NAVSURFWARCENDIV Crane. Initial input of PRC-2000 data into MICRO ISEA commenced on 31 December 1994. PRC-2000-2M Systems are tracked by the serial numbers marked on the identification tag attached to the rear of the PPS-400, Power Source.

NAVSEA S9665-CY-ILS-010/PRC-2000/U

9.2.1 MICRO ISEA. MICRO ISEA was created by Naval Undersea Warfare Engineering Station (NUWES) to supply Ships' Configuration and Logistics Support Information System (SCLISIS) and Fleet Modernization Program (FMP) information to the Configuration Data Managers (CDM) to update the Weapons systems File (WSF). This continuous update provides for a current configuration for most Navy ships in their onboard computer. MICRO ISEA provides full configuration records for all ships and equipments. Queries can be made on a ship, equipment, or alteration (field change) level. The following information is entered into the MICRO ISEA database by the 2M ISEA in reference to the PRC-2000-2M System:

SHIP (Site)

UIC (Unit Identification Code) - XXXXXX

EIN (Equipment Identify Number) - PRC-2000-2M System

ESN (Equipment Serial Number) - XX-XX-XXXX

ISC (Installation Status Code) - G (Installed)

QTY (Quantity of equipment on a ship/site)

EIC (Equipment Identification Code) - WR1P000

CRIC (Configuration Repairable Identification Code) - 00032540

LOC (Location)

CAGE/FSCM (Commercial and Government Entity/Federal Supply Code) - 17794

MCC (Mission Criticality Code) - 1 (Failure of component/equipment causes minor mission impact)

NHA (Next Higher Assembly) - PRC-2000-2M System

PSN (Parent Serial Number) - XX-XX-XXXX

MEC (Mission Essentiality Code) - N (Non vital)

CCIM (Configuration Item Manager) - N00164 (NAVSURFWARCENDIV Crane)

AQTY (Number of applications of an alteration to be installed on a specific hull)

ALTTYPE (Alteration Type)

ALTNUM (Alteration Number)

ARIC (Alteration Repairable Identification Code)

ALTSTAT (Alteration Status Code)

ALT PLANDATE (Date alteration is planned)

ALTPRI (Alteration Priority)

KITSN (Alteration Kit Serial Number)

10.0 CONFIGURATION AUDITS

There are two types of configuration audits used to formally examine and verify the functional and/or physical configuration of the CI. The audits verify the compliance of specifications and other contract requirements.

10.1 Functional Configuration Audit (FCA). The FCA verifies that the CI has achieved the performance specified in its Functional Configuration Identification (FCI) and that the technical documentation for the CI accurately reflects the CI's functional characteristics.

10.1.1 PRC-2000-2M System FCA. N/A, the PRC-2000-2M System is a commercial off-the-shelf, NDI.

10.2 Physical Configuration Audit (PCA). PCAs are performed on the first article of CIs by the ISEA to confirm that the as-built physical characteristics of hardware CIs match the

approved physical configuration of the items. The PCA determines the actual configuration of the CI and identifies and verifies any differences between the technical documentation and the physical item. It also verifies the accuracy of the technical descriptions and identifies documentation discrepancies upon audit completion.

10.2.1 PRC-2000-2M System PCA. The PRC-2000-2M System PBL was verified during a Provisioning Conference (PCA) at PACE Incorporated on 25 May 1994. Representatives from the NAVICP (PSICP) and NAVSURFWARCENDIV Crane (TSA) were on hand to verify that the "as built" (PBL) PRC-2000-2M System matched the technical specifications and PTD (product drawings and parts lists).

10.3 2M Repair Site Review. Review of 2M equipment, including the PRC-2000-2M System, is accomplished in accordance with the Certification Plan for the 2M Program, NAVSEA TE000-AA-PLN-010/2M, (see Section IV of the plan for 2M Site requirements). The 2M repair site review is conducted by the Fleet Technical Support Center (FTSC) 2M Fleet Coordinator or their designated 2M Inspector representative. The FTSC 2M Fleet Coordinator conducts a review for minimum 2M standards of equipment, tools, and material. The Coordinator also reviews, for minimum 2M standards, 2M certified personnel, Electrostatic Discharge (ESD) handling procedures and capabilities, proper environmental working conditions, and quality of work produced. All 2M repair sites will be reviewed every 18 months. This interval may be extended to 24 months by the TYCOM to facilitate scheduling. Most afloat and some shore 2M facility reviews are scheduled to correspond with the periodicity of major TYCOM reviews, (e.g. Combat Systems Readiness Review). During the 2M repair site review, the FTSC 2M Fleet Coordinator will document (2M Repair Site Review) the PRC-2000-2M System serial number and space location and verify operability. The Coordinator will maintain a 2M Program Binder which will contain copies of all 2M Repair Site Reviews conducted (see NAVSEA TE000-AA-PLN-010/2M, Appendix E). FTSC 2M Fleet Coordinators will be validated annually by the 2M Certification Agent (2M ISEA). Primarily the 2M Certification Agent will advise, and/or assist Coordinators in matters concerning 2M Program management and administration, as applicable. The Certification Agent will also retrieve 2M Program Binder/2M Repair Site Review data as necessary to validate the 2M SCLSSIS database.

11.0 SUBCONTRACTOR/VENDOR CONTROL

PACE Inc., manufacturer of the PRC-2000, shall notify the 2M ISEA of all changes, whether of a production or modification type, which are approved for incorporation into the PRC-2000 or its supporting equipment, (see DGSC Richmond, Contract No. DLA490-93-D-6081, Section J, Exhibit A, DLA490-93-R-2242, Attachment Number 7 and 9, Design Change Notice).

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