

**NAVY TRAINING SYSTEM PLAN**  
**FOR**  
**NAVAL AVIATION OXYGEN SYSTEMS**

**N88-NTSP-A-50-8603C/D**

**DECEMBER 2001**

## NAVAL AVIATION OXYGEN SYSTEMS

### EXECUTIVE SUMMARY

Naval Aviation Oxygen Systems (NAOS) include the On-Board Oxygen Generating System (OBOGS), Liquid Oxygen (LOX) System, and the Aviators Breathing Oxygen (ABO) Contaminant Analyzer. All three programs have reached Full Operational Capability and are in the Operations and Support phase of the Defense Acquisition System (DAS).

The OBOGS was developed to provide a continuous supply of oxygen-enriched air to the aircrew when the system is activated during aircraft engine operation. Initial Operational Capability (IOC) was achieved in September 1985. The LOX Converter Assembly converts LOX into gaseous oxygen for the aircrew during flight and pressure regulated by either a panel or man-mounted diluter demand regulator. The LOX system is a fully developed legacy system and all acquisition milestones have been achieved. The ABO Contaminant Analyzer is used with existing auxiliary support equipment to provide ABO contaminant analysis capability. ABO Contaminant Analyzer IOC was achieved in March 1994 and all units were delivered prior to the Navy Support Date (NSD) in September 1996.

Navy Aviation Structural Mechanics (Safety Equipment) (AME) with aircraft specific Navy Enlisted Classifications (NEC) and Marine Corps Aircraft Safety Equipment Mechanics with aircraft specific Military Occupational Specialties (MOS) maintain the OBOGS and LOX at the organizational level. The ABO Contaminant Analyzer is not used at the organizational level. Navy Aviation Survival Equipmentmen with NEC 7356 and Marine Corps Flight Equipment Marines with MOS 6048 maintain OBOGS and LOX System components, and operate and maintain the ABO Contaminant Analyzer at the intermediate level. The respective manufacturer performs depot level maintenance for the OBOGS, LOX components, and the ABO Contaminant Analyzer. Naval Aviation Depot Jacksonville, Florida, also performs depot level maintenance for LOX components. The manpower identified in current Navy and Marine Corps manpower documents is sufficient to support the NAOS. No new NECs or MOSs will be required.

Initial training for all three systems has been completed. Follow-on training for OBOGS and LOX System organizational level maintenance is included in applicable aircraft Naval Air Maintenance Training Group organizational level maintenance training courses. Previously established follow-on OBOGS intermediate level maintenance training at Maintenance Training Unit (MTU) 1038 Naval Aviation Maintenance Training Unit (NAMTRAU) Lemoore, California, and MTU 1039 NAMTRAU Oceana, Virginia, has been discontinued. The OBOGS maintenance curricula is being added to the Aircrew Survival Equipment Intermediate Maintenance Pipeline at Naval Air Technical Training Center (NATTC) Pensacola, Florida. The OBOGS course will be Ready For Training in Fiscal Year 02. LOX System components and ABO Contaminant Analyzer intermediate level maintenance training is part of the existing Aircrew Survival Equipment Intermediate Maintenance Pipeline at NATTC, Pensacola.

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## NAVAL AVIATION OXYGEN SYSTEMS

### LIST OF ACRONYMS

|                    |  |
|--------------------|--|
| ABO                | Aviators Breathing Oxygen                              |
| AIMD               | Aviation Intermediate Maintenance Department           |
| AME                | Aviation Structural Mechanic (Safety Equipment)        |
| AMTCS              | Aviation Maintenance Training Continuum System         |
| AOS                | Aircraft Oxygen System                                 |
| BIT                | Built-In Test  |
| BOSS               | Buy Our Spares Smart                                   |
| CIN                | Course Identification Number                           |
| CINCLANTFLT        | Commander in Chief, Atlantic Fleet                     |
| CINCPACFLT         | Commander in Chief, Pacific Fleet                      |
| CMC                | Commandant Marine Corps                                |
| CNET               | Chief of Naval Education and Training                  |
| CNO                | Chief of Naval Operations                              |
| COTS               | Commercial Off-The-Shelf                               |
| DAS                | Defense Acquisition System                             |
| FMS                | Foreign Military Sales                                 |
| FY                 | Fiscal Year  |
| G                  | Gravity Force  |
| inH <sub>2</sub> O | Inches of Water  |
| ILSP               | Integrated Logistics Support Plan                      |
| LITOCs             | Litton Oxygen Concentrating System                     |
| LOX                | Liquid Oxygen  |
| lpm                | Liters per Minute                                      |
| MALS               | Marine Aviation Logistics Squadron                     |
| MATMEP             | Maintenance Training Management and Evaluation Program |
| MCAS               | Marine Corps Air Station                               |
| MCCDC              | Marine Corps Combat Development Command                |
| MM                 | Machinist's Mate                                       |
| MOS                | Military Occupational Specialty                        |
| MSD                | Material Support Date                                  |

NAVAL AVIATION OXYGEN SYSTEMS

LIST OF ACRONYMS

|                  |  |
|------------------|--|
| MTIP             | Maintenance Training Improvement Program             |
| MTRR             | Maintenance Training Requirements Review             |
| MTU              | Maintenance Training Unit                            |
| NA               | Not Applicable                                       |
| NACES            | Naval Aircrew Common Ejection Seat                   |
| NAMTRAGRU DET    | Naval Air Maintenance Training Group Detachment      |
| NAMTRAU          | Naval Aviation Maintenance Training Unit             |
| NAOS             | Naval Aviation Oxygen Systems                        |
| NATC             | Naval Air Test Center                                |
| NATTC            | Naval Air Technical Training Center                  |
| NAVAIR           | Naval Air Systems Command                            |
| NAVAIRSYSCOM     | Naval Air Systems Command                            |
| NAVICP           | Naval Inventory Control Point                        |
| NAVPERSCOM       | Naval Personnel Command                              |
| NAWCADLKE        | Naval Air Warfare Center Aircraft Division Lakehurst |
| NEC              | Navy Enlisted Classification                         |
| NSD              | Navy Support Date                                    |
| NTSP             | Navy Training System Plan                            |
| OBIGGS           | On-Board Inert Gas Generating System                 |
| OBOGS            | On-Board Oxygen Generating System                    |
| OPEVAL           | Operational Evaluation                               |
| OPNAV            | Office of the Chief of Naval Operations              |
| OPNAVINST        | Office of the Chief of Naval Operations Instruction  |
| OPO              | OPNAV Principal Official                             |
| PMA              | Program Manager, Air                                 |
| PO <sub>2</sub>  | Pressure of Oxygen                                   |
| PPO <sub>2</sub> | Partial Pressure of Oxygen                           |
| PR               | Aviation Survival Equipmentman                       |
| psi              | Pounds per Square Inch                               |
| psig             | Pounds per Square Inch Gauged                        |
| RFI              | Ready For Issue                                      |
| RFT              | Ready For Training                                   |
| SESM             | Solid State Oxygen Monitor                           |

**NAVAL AVIATION OXYGEN SYSTEMS**

**LIST OF ACRONYMS**

|          |                              |
|----------|------------------------------|
| SSOM     | Solid State Oxygen Monitor   |
| TD       | Training Device              |
| TECHEVAL | Technical Evaluation         |
| TOC      | Total Ownership Cost         |
| TTE      | Technical Training Equipment |
| WRA      | Weapon Replaceable Assembly  |

## **NAVAL AVIATION OXYGEN SYSTEMS**

### **PREFACE**

This Draft Navy Training System Plan (NTSP) for the Naval Aviation Oxygen Systems (NAOS) updates the On-Board Oxygen Generating System (OBOGS) Approved NTSP, A-50-8603B/A, dated June 1994, and supercedes the A/E 24T-226 Aviators Breathing Oxygen Contaminant Analyzer Draft NTSP, A-50-9308A/D, dated February 1999. This document has been developed in accordance with the guidelines set forth in the Navy Training Requirements Documentation Manual, Office of the Chief of Naval Operations (OPNAV) Publication P-751-1-9-97. Major changes to this document include:

- Changing the name of the NTSP from On-Board Oxygen Generating System to Naval Aviation Oxygen Systems. This title change more accurately reflects the revised content of the document.
- Incorporation of information applicable to the A/E 24T-226 Aviators Breathing Oxygen (ABO) Contaminant Analyzer and all components of the Liquid Oxygen (LOX) System. The ABO Contaminant Analyzer information was previously contained in NTSP A-50-9308A/D, A/E 24T-226 Aviators Breathing Oxygen Contaminant Analyzer, dated February 1999.
- Updating all information for OBOGS, LOX System, and the A/E 24T-226 ABO Contaminant Analyzer.
- Incorporation of NTSP format changes and updating of milestones and points of contact since the last publication date.

**PART I - TECHNICAL PROGRAM DATA**

**A. NOMENCLATURE-TITLE-PROGRAM**

1. **Nomenclature-Title-Acronym.** Naval Aviation Oxygen Systems (NAOS)
2. **Program Element.** 64264N

**B. SECURITY CLASSIFICATION**

1. **System Characteristics** ..... Unclassified
2. **Capabilities** ..... Unclassified
3. **Functions**..... Unclassified

**C. MANPOWER, PERSONNEL, AND TRAINING PRINCIPALS**

- OPNAV Principal Official (OPO) Program Sponsor..... CNO (N78)
- OPO Resource Sponsor ..... CNO (N78)
- Functional Mission Sponsor ..... CNO (N78)
- Marine Corps Program Sponsor..... CMC (ASL-33)
- Developing Agency..... NAVAIRSYSCOM (PMA202)
- Training Agency ..... CINCLANTFLT  
CINCPACFLT  
CMC  
CNET
- Training Support Agency ..... NAVAIRSYSCOM (PMA205)
- Manpower and Personnel Mission Sponsor ..... CNO (N12)  
NAVPERSCOM (PERS-4, PERS-404)
- Director of Naval Training ..... CNO (N795)
- Marine Corps Force Structure..... MCCDC (C53)

## **D. SYSTEM DESCRIPTION**

**1. Operational Uses.** NAOS includes the OBOGS, the LOX System, and the ABO Contaminant Analyzer.

**a. On-Board Oxygen Generating System.** The OBOGS provides a continuous supply of oxygen-enriched air to the aircrew when the system is activated during aircraft engine operation. OBOGS installation eliminates aircraft dependence on LOX facilities. OBOGS facilitates the deployment of aircraft aboard air capable ships and shore bases that do not have the capability of oxygen manufacturing. The Litton Oxygen Concentrating System (LITOCES) and On-Board Inert Gas Generating System (OBIGGS) are special applications of OBOGS technology developed specifically for the T-6 and V-22 aircraft.

**b. Liquid Oxygen System.** The LOX System is designed to convert LOX into gaseous oxygen for use by the aircrew at altitudes up to a maximum of 50,000 feet.

**c. Aviators Breathing Oxygen Contaminant Analyzer.** The model A/E 24T-226 ABO Contaminant Analyzer is a modularized unit capable of analyzing contaminant levels and determining the concentration of contaminants that may be present in ABO.

**2. Foreign Military Sales.** For information concerning Foreign Military Sales (FMS) of NAOS equipment, contact Naval Air Systems Command (NAVAIRSYSCOM) Program Manager, Air (PMA) 202D.

## **E. DEVELOPMENTAL TEST AND OPERATIONAL TEST**

### **1. Technical Evaluation**

**a. On-Board Oxygen Generating System.** Technical Evaluation (TECHEVAL) was conducted on an OBOGS-equipped AV-8A Aircraft from February 1980 to August 1981 at the Naval Air Test Center (NATC) Patuxent River, Maryland, and Marine Corps Air Station (MCAS) Yuma, Arizona. TECHEVAL on an improved OBOGS installed in an AV-8A Aircraft was conducted at NATC Patuxent River from January to March 1982. Results were satisfactory.

**b. Liquid Oxygen System.** Not Applicable (NA)

**c. Aviators Breathing Oxygen Contaminant Analyzer.** Two TECHEVALs were conducted on the ABO Contaminant Analyzer at the Naval Air Warfare Center, Aircraft Division, Patuxent River. These evaluations were completed in July 1993. After correcting discrepancies, the ABO Contaminant Analyzer was approved for fleet use in 1994.

### **2. Operational Evaluation**

**a. On-Board Oxygen Generating System.** Operational Evaluation (OPEVAL) was conducted on an AV-8 OBOGS-equipped aircraft at MCAS Yuma from October 1983 to

February 1984. Marine Corps personnel under the direction of the Commander, Operational Test and Evaluation Force, Norfolk, Virginia, conducted OPEVAL. OBOGS was found operationally suitable and effective.

**b. Liquid Oxygen System. NA**

**c. Aviators Breathing Oxygen Contaminant Analyzer.** OPEVAL was not required for the ABO Contaminant Analyzer.

**F. AIRCRAFT AND/OR EQUIPMENT/SYSTEM/SUBSYSTEM REPLACED**

**1. On-Board Oxygen Generating System.** The OBOGS is designed to replace the LOX System. This is planned replacement by attrition with OBOGS being installed in new development aircraft. The CRU-99/A Solid State Oxygen Monitor (SSOM) is scheduled to replace all installations of the CRU-83/A and CRU-91/A Polarographic Alarm Monitors. The CRU-103/P Oxygen Regulator is scheduled to replace the CRU-82/P and CRU-88/P series regulators as part of a Total Ownership Cost (TOC) Initiative.

**2. Liquid Oxygen System.** A Cost Benefit Analyses developed by the Aviation Oxygen Systems Fleet Support Team determined that it is the best interest of the Navy and Marine Corps to convert all aircraft from LOX to OBOGS. The elimination of LOX enhances safety and mission effectiveness, while reducing maintenance, operational support costs, and the logistics infrastructure. As a result, the Aviation Oxygen Systems Fleet Support Team established a goal to replace all LOX Systems in all Department of the Navy aircraft, aircraft carriers, and shore bases with OBOGS by 2007. The CRU-103/P Oxygen Regulator is scheduled to replace the CRU-79/P and CRU-88/P series regulators as part of a Total Ownership Cost (TOC) Initiative.

**3. Aviators Breathing Oxygen Contaminant Analyzer.** The ABO Contaminant Analyzer replaced the ACCULAB-4 and ACCULAB-8 Oxygen Analyzers.

**G. DESCRIPTION OF NEW DEVELOPMENT**

**1. Functional Description.** The following table identifies specific aircraft applications of OBOGS and LOX Systems, components, oxygen monitors, and oxygen regulators.

### AIRCRAFT APPLICATION TABLE

| COMPONENT NOMENCLATURE | AV/TAV-8B | E-2 | EA-6B | F-14A/B | F-14D | F/A-18 (Blue Angels) | F/A-18A/B | F/A-18C/D | F/A-18C/D (Lot 13 and Up) | F/A18-E/F | ES-3A/S-3B | T-2C | T-6A | T-45A/C | MV-22A |
|------------------------|-----------|-----|-------|---------|-------|----------------------|-----------|-----------|---------------------------|-----------|------------|------|------|---------|--------|
| OBOGS                  | X         |     |       |         | X     |                      |           |           | X                         | X         |            |      |      | X       |        |
| GGU-7/A                | X         |     |       |         |       |                      |           |           |                           |           |            |      |      | X       |        |
| GGU-12/A               |           |     |       |         | X     |                      |           |           | X                         | X         |            |      |      |         |        |
| LITOCs                 |           |     |       |         |       |                      |           |           |                           |           |            |      | X    |         |        |
| OBOGS/OBIGGS           |           |     |       |         |       |                      |           |           |                           |           |            |      |      |         | X      |
| CRU-83/A               | X         |     |       |         | X     |                      |           |           |                           |           |            |      |      | X       |        |
| CRU-91/A               | X         |     |       |         | X     |                      |           |           |                           |           |            |      |      | X       |        |
| CRU-99/A SSOM          | X         |     |       |         | X     |                      |           |           | X                         | X         |            |      |      | X       | X      |
| LOX                    |           | X   | X     | X       |       | X                    | X         | X         |                           |           | X          | X    |      |         |        |
| CRU-79/P               |           | X   | X     | X       |       | X                    | X         | X         |                           |           | X          | X    |      |         |        |
| CRU-82/P               | X         |     |       |         | X     |                      |           |           | X                         | X         |            |      |      | X       |        |
| CRU-88/P               | X         |     |       | X       |       |                      | X         | X         | X                         | X         |            |      |      | X       | X      |
| CRU-98/P               |           |     |       |         |       |                      |           |           |                           |           |            |      | X    |         |        |
| CRU-103/P              | X         | X   | X     | X       | X     | X                    | X         | X         | X                         | X         | X          | X    |      | X       | X      |

**a. On-Board Oxygen Generating System.** The OBOGS consists of three primary components: an oxygen concentrator, an oxygen monitor, and an oxygen regulator. OBOGS provides a continuous supply of oxygen-enriched air to the aircrew when the system's electrical power source is activated and engine bleed air or conditioned air is provided to the inlet of the oxygen concentrator. The self-contained OBOGS includes the GGU-7/A or GGU-12/A Oxygen Concentrators or CRU-99/A SSOM and CRU-82/P, CRU-88/P, or CRU-103/P Oxygen Regulators. Airframe peculiar equipment, which includes plenum(s), valves, plumbing, and other parts are required in order to integrate the OBOGS with the host aircraft.

Litton Life Support, the primary OBOGS development contractor, has developed specific applications of OBOGS technology for incorporation into the T-6A and the MV-22 aircraft. The LITOCES is a high performance OBOGS Concentrator for single and dual seat aircraft that was developed specifically for the T-6A and the Brazilian ALX Advanced Trainer, Pilatus PC-9. An integral oxygen monitor-controller utilizes a current-limiting zirconia oxygen sensor that does not require a reference gas or periodic calibration. Comprehensive Built-In Test (BIT) provides self-testing of the oxygen monitor and eliminates the need for all organizational level support equipment. LITOCES is ideally suited for use where engine bleed air pressure is low and air consumption is critical.

The OBOGS/OBIGGS Concentrator was specifically designed for the MV-22 and supports up to four crewmembers. The OBOGS/OBIGGS Concentrator uses a common valve assembly and control scheme to cycle engine bleed air through separate beds of molecular sieve. This system performs the functions of two separate systems: 1) supplies oxygen-enriched air for aircrew breathing and 2) supplies inert gas to the fuel tanks to protect the aircraft from fuel tank explosion and fire. This system also includes a SSOM to confirm performance of the system.

**(1) Oxygen Concentrator.** The Oxygen Concentrator is a self-contained unit that is capable of providing oxygen-enriched air for aircrew at altitudes up to 50,000 feet. The oxygen concentrator extracts undesirable gases from either engine bleed air or conditioned air and provides a continuous high concentration of oxygen-enriched air for aircrew use. The gaseous product consists of approximately six-percent argon with the balance consisting of oxygen. On the F-14D and F/A-18C/D, the concentrator is located in the same space previously occupied by the LOX converter. The AV-8B and T-45 were originally designed and fielded with OBOGS installed. The concentrator is composed of the following components:

**(a) Molecular Sieve Beds.** Two Molecular Sieve Beds act to adsorb nitrogen molecules through molecular bonding as engine bleed air or conditioned air passes through them. Each bed contains 5.5 pounds of molecular sieve. The sieve retains the unwanted gasses as the source air flows through the bed with the desired oxygen-enriched air exiting the sieve bed and being routed to the aircrew. The sieve beds are purged via cycling of the rotary valve on alternate cycles in which nitrogen is dissipated with other undesirable gases and vented overboard. The sieve beds do not require periodic replacement.

**(b) Rotary Valve Assembly.** The Rotary Valve Assembly consists of a direct current motor driven valve that rotates on a timed basis to control the gas flow in order to cause alternate adsorption and desorption cycles in the sieve beds.

**(c) Electronics Box Assembly.** The Electronics Box Assembly controls the temperature of the heater assembly and shroud heater solenoid, and controls timing of the rotary valve assembly.

**(d) Plenum Assembly.** The Plenum Assembly stores oxygen rich gas produced by the Molecular Sieve Beds.

(e) **Inlet Filter Assembly.** The Inlet Filter Assembly removes contaminants from the air source before being routed to the Molecular Sieve Beds.

(2) **Oxygen Monitor.** The Oxygen Monitor senses Partial Pressure of Oxygen (PPO<sub>2</sub>) and provides a warning signal through the aircraft's WARNING-CAUTION-ADVISORY system if the oxygen concentration falls below 182 millimeters of mercury. The monitor is mounted in the cockpit and consists of the following items:

(a) **Aneroid Assembly.** The Aneroid Assembly senses the change in air pressure resulting from changes in altitude.

(b) **Aneroid Valve and Filter Assembly.** The Aneroid Valve and Filter Assembly control pressure in the oxygen sensor chamber in order to prevent false low PPO<sub>2</sub> warnings.

(c) **Sensor Cover Assembly.** The Sensor Cover Assembly provides access to the sensor chamber for sensor replacement.

(d) **Oxygen Sensor.** The Oxygen Sensor is a polarographic oxygen sensor that detects Pressure of Oxygen (PO<sub>2</sub>) while being insensitive to other gases. An electrical current, proportional to PO<sub>2</sub>, is produced by the sensor, activating a warning light when PO<sub>2</sub> falls below the minimum physiological requirements.

(e) **Press to Vent Assembly.** The Press To Vent Assembly is an inlet assembly that draws ambient air across the oxygen sensor when the plunger Built-In Test valve is depressed.

(f) **Cover Screw and Lanyard Assembly.** The Cover Screw and Lanyard Assembly provide access to the monitor gain adjustment potentiometer.

(3) **Solid State Oxygen Monitor.** The CRU-99/A SSOM (P/N 3270063-0102) is a direct replacement for the CRU-83/A and CRU-91/A Polarographic Oxygen Monitors. The oxygen sensor in the SSOM is a current limiting zirconia type sensor. The SSOM incorporates several self-test features, is not adjustable, and does not require intermediate level testing or maintenance.

#### (4) OBOGS Regulators

| LEADING PARTICULARS   | CRU-82/P | CRU-88/P | CRU-103/P |
|---|----------|----------|-----------|
| Recommended Inlet Pressure (pounds per square inch gauged (psig)) | 5-120    | 5-120    | 5-120     |
| Flow (liters per minute (lpm))                                    | 0-100    | 0-180    | 0-240     |

| <b>LEADING PARTICULARS</b>       | <b>CRU-82/P</b> | <b>CRU-88/P</b> | <b>CRU-103/P</b> |
|----------------------------------|-----------------|-----------------|------------------|
| Operating Altitude Range (feet)  | 0-50,000        | 0-50,000        | 0-50,000         |
| Operating Temperature Range (°F) | -65 to +160     | -65 to +165     | -65 to +160      |
| Weight (ounces)                  | 9.50            | 10.25           | 12.00            |

**(a) CRU-82/P Oxygen Regulator.** The CRU-82/P Oxygen Regulator is mounted by a quick disconnect attachment to the aircrew parachute harness. The regulator is an automatic pressure breathing type, providing oxygen-enriched air to the aircrew facemask during flight. The safety pressure feature automatically maintains a positive pressure in the mask of 0.4 to 2.5 inches of water (inH<sub>2</sub>O) at all altitudes up to approximately 34,000 feet, and up to 20 inH<sub>2</sub>O at altitudes between 34,000 and 50,000 feet with the positive pressure increasing with altitude. The CRU-82/P can be used routinely up to approximately 43,000 feet. However, due to risk of rapid and severe hypoxia, the CRU-82/P shall not be used above 41,000 feet except for very short periods. The CRU-82/P is designed for use with the MBU-14 series oxygen mask.

**(b) CRU-88/P Oxygen Regulator.** The CRU-88/P Oxygen Regulator is mounted by a quick disconnect attachment to the aircrew parachute harness. The regulator is an automatic pressure breathing type, providing oxygen-enriched air to the aircrew facemask during flight. The safety pressure feature automatically maintains a positive pressure in the mask of 0.5 to 4.0 inH<sub>2</sub>O at all altitudes up to approximately 34,000 feet, and up to 20 inH<sub>2</sub>O at altitudes between 34,000 and 50,000 feet with the positive pressure increasing with altitude. The CRU-88/P can be used routinely up to approximately 41,000 feet with OBOGS. Above this altitude, aircrew will suffer rapid and severe hypoxia if chest-mounted regulators are used except for very short periods. The CRU-88/P is designed for use with the MBU-14 series oxygen mask.

**(c) CRU-103/P Demand Oxygen Regulator.** The CRU-103/P Demand Oxygen Regulator is designed for use with all tactical aircraft series oxygen masks as part of the oxygen system in aircraft with LOX systems or OBOGS. The regulator is designed to regulate oxygen to the aircrew member during flight. The CRU-103/P Demand Oxygen Regulator was developed as a part of the Navy Combat Edge system. It is a chest mounted, automatic positive pressure breathing type, Gravity Force (G)-modulated regulator that provides demand oxygen flow to the aircrew member including Pressure Breathing for Altitude and Pressure Breathing for Gs.

The CRU-103/P regulator has proven to be a less expensive, very reliable, easily maintained regulator. For these reasons it was designated by PMA202 as the regulator of choice, and the Aviation Oxygen Systems team was tasked with implementing it as the sole tactical aviation regulator. The CRU-103/P is scheduled to replace the CRU-79/P, CRU-82/P, and CRU-88/P series regulators under a TOC Initiative program to achieve that goal.

**b. Liquid Oxygen System.** The LOX System is designed to store and convert LOX into gaseous breathing oxygen for aircrew use during flight. Valves, tubing, and fittings incorporated in the converter assembly convert LOX on demand to gas, and direct its flow at a controlled rate to the crew for breathing. A typical LOX System consists of the following components:

**(1) LOX Converter Assembly**

**(a) Sphere Assembly.** Oxygen in its liquid state (approximately 297° F) is stored in a spherical assembly consisting of inner and outer shells separated by an annular space. The annular space is evacuated, preventing the transmittal of heat through the space. The thermos bottle effect created retards heating and eventual conversion of LOX to gaseous oxygen.

**(b) Build-Up and Vent Valves.** Build-Up and Vent Valves supply gaseous pressure to the upper portion of the Pressure Closing Valve to allow closure.

**(c) Relief Valve.** Without a demand being placed on the converter, pressure continues to slowly rise. If allowed to go unchecked, pressure in excess of 12,000 Pounds per Square Inch (psi) could be generated. The Relief Valve is set to relieve pressure in excess of 110 psi.

**(d) Pressure Closing Valve.** This valve allows pressure from the Build-Up Valve to enter the top of the Sphere Assembly. This is set to maintain 75 psi of pressure for system operation.

**(2) Liquid Oxygen Regulators**

| <b>LEADING PARTICULARS</b>        | <b>CRU-79/P</b> | <b>CRU-88/P</b> | <b>CRU-103/P</b> |
|-----------------------------------|-----------------|-----------------|------------------|
| Recommended Inlet Pressure (psig) | 40-120          | 5-120           | 5-120            |
| Flow (lpm)                        | 0-100           | 0-180           | 0-240            |
| Operating Altitude Range (feet)   | 0-50,000        | 0-50,000        | 0-50,000         |
| Operating Temperature Range (°F)  | -65 to +160     | -65 to +165     | -65 to +160      |
| Weight (ounces)                   | 5.00            | 10.25           | 12.00            |

**(a) CRU-79/P Type Miniature Oxygen Breathing Regulators.** The Type CRU-79/P miniature oxygen breathing regulators are designed to reduce and regulate supply oxygen pressure for breathing 100% oxygen. The safety-pressure feature automatically maintains a positive pressure in the mask of up to 20.0 inH<sub>2</sub>O at all altitudes up to and including

30,000 feet. The pressure-breathing feature maintains a positive pressure in the mask of up to 20.0 inH<sub>2</sub>O at altitudes between 34,000 and 50,000 feet with the positive pressure increasing in proportion to the altitude. The CRU-79/P can be used routinely up to approximately 45,000 feet. Type CRU-79/P miniature regulators shall not be used above 50,000 feet except for very short periods. The CRU-79/P is designed for use with the MBU-14 series oxygen mask.

**(b) CRU-88/P Oxygen Regulator.** The CRU-88/P Oxygen Regulator is mounted by a quick disconnect attachment to the aircrew parachute harness. The safety pressure feature automatically maintains a positive pressure in the oxygen mask of 0.5 to 4.0 inH<sub>2</sub>O at all altitudes up to approximately 34,000 feet, and up to 20 inH<sub>2</sub>O at altitudes between 34,000 and 50,000 feet with the positive pressure increasing in proportion to the altitude. The CRU-88/P can be used routinely up to approximately 43,000 feet with LOX. Above this altitude, aircrew will suffer rapid and severe hypoxia if chest-mounted regulators are used except for very short periods. The CRU-88/P is designed for use with the MBU-14 series oxygen mask.

**(c) CRU-103/P Demand Oxygen Regulator.** The CRU-103/P Demand Oxygen Regulator is designed for use with all tactical aircraft series oxygen masks as part of the oxygen system in aircraft with LOX systems or OBOGS as described in paragraph G.1.a(4)(c) above. This regulator is scheduled to replace the CRU-79/P, CRU-82/P, and CRU-88/P series regulators under a TOC Initiative program.

**c. Aviators Breathing Oxygen Contaminant Analyzer.** The ABO Contaminant Analyzer is capable of scanning a gas phase sample containing up to fifteen contaminants and providing an output of the quantitative results. This analysis is performed on gas samples at one psi above sea level pressure. Contaminant analysis time, including evacuated cell analysis (background scan), sample analysis, data processing, and printout of results, is less than ten minutes. The unit's computer is capable of searching a library and comparing it with sample spectra to estimate the composition of the suspected contaminant substance(s). The ABO Contaminant Analyzer uses an Infrared Spectrophotometer integrated with a microprocessor, which produces a printout of the qualitative and quantitative contamination levels encountered. The ABO Contaminant Analyzer is used to ensure specifications of the ABO are maintained per the Naval Air Systems Command (NAVAIR) AG-332AO-GYD-000, ABO Surveillance Program Laboratory Manual and Field Guide. The ABO Contaminant Analyzer is located at Navy and Marine Corps Air Stations, expeditionary sites, and onboard Navy aircraft carriers. The unit consists of the following components:

**(1) Data Processor.** The Data Processor changes the signal from the infrared detector into a spectrum curve, then compares it to spectrum curves of a preprogrammed signal to determine if a contaminant is present, and if so, at what quantity.

**(2) Built-In Keyboard.** The Built-In Keyboard is a 40-character keypad, similar to a standard typewriter with numeric keypad. The Built-In Keyboard is used for entering textual information.

**(3) Two-Line Display.** Most software functions appear as menu options in the Two-Line Display. Four blue soft keys adjacent to the display allow selection of the desired software function from the menu.

**(4) Internal Printer.** The Internal Printer is permanently mounted and prints on four-inch wide rolled thermal paper.

**(5) Optics.** The three main components of the Optics are the Michelson interferometer, an infrared light source, and a detector. The interferometer consists of a partially reflective beam-splitter mirror, a mirror that oscillates back and forth, and an automatic alignment machine for the beam splitter.

**(6) Gas Cell.** The Gas Cell houses the gas sample during analysis and is located in the sample compartment. The 10-meter multi-path length cell bounces the beam of infrared light back and forth within the cell to achieve a greater path length without the need for an excessively large gas cell. All gas cells feature a safety release valve that prohibits pressure inside the cell from exceeding 25 psi.

**(7) Hard Drive.** A 210-megabyte internally mounted hard drive provides space for storing the system software and the spectrum libraries.

**(8) Laser.** The source of laser energy is a nominal two-milliwatt, continuous, 632.8 nanometer laser head.

## **2. Physical Description**

**a. On-Board Oxygen Generating System.** The components of the OBOGS are contained within the interior portion of the aircraft and do not affect any storage or aircraft handling considerations.

**b. Liquid Oxygen Systems.** The components of LOX systems are contained within the interior portion of the aircraft and do not affect any storage or aircraft handling considerations.

### **c. Aviators Breathing Oxygen Contaminant Analyzer**

|                                  |                                       |
|----------------------------------|---------------------------------------|
| Electrical requirements .....    | 115 volts, 60 Hertz                   |
| Electro Magnetic Interference... | 5 volts per meter (MIL-STD-461, RS03) |
| Length.....                      | 30.5 inches                           |
| Width .....                      | 42.0 inches                           |
| Height .....                     | 23.0 inches                           |
| Shipping Weight .....            | 300 pounds                            |

### 3. New Development Introduction

**a. On-Board Oxygen Generating System.** The OBOGS will be installed in the MV-22, T-6A, and F/A-18E/F aircraft during production. Existing AV-8B, TAV-8B, and T-45 aircraft were manufactured with OBOGS installed. OBOGS was installed in existing F-14D and F/A-18C/D aircraft (Lot 13 and up) through retrofit programs.

The CRU-99/A SSOM was developed and first fielded in OBOGS equipped F/A-18C/D Aircraft and new production T-45 Aircraft. It is now also being incorporated in all OBOGS aircraft platforms through a Navy Inventory Control Point (NAVICP) Buy Our Spares Smart (BOSS) III retrofit program.

The CRU-103/P Oxygen Regulator is currently being fielded with the Navy Combat Edge system. These regulators will also be delivered with Lot XIV Naval Aircrew Common Ejection Seat (NACES) deliveries at two per seat.

**b. Liquid Oxygen System.** NA

**c. Aviators Breathing Oxygen Contaminant Analyzer.** The ABO Contaminant Analyzer was procured as a Commercial Off-The-Shelf (COTS) Non-Developmental Item.

### 4. Significant Interfaces

**a. On-Board Oxygen Generating System.** The OBOGS interfaces directly with the aircraft quick disconnect fittings used during emergency egress; the MBU-14, MBU-23/P, and MBU-24/P series oxygen masks; the Navy Combat Edge system; and the engine bleed air system.

**b. Liquid Oxygen System.** The LOX interfaces directly with the aircraft quick disconnect fittings used during emergency egress and the MBU-14 series oxygen masks.

**c. Aviators Breathing Oxygen Contaminant Analyzer.** NA

### 5. New Features, Configurations, or Material. NA

## H. CONCEPTS

### 1. Operational Concept

**a. On-Board Oxygen Generating System.** By design, the OBOGS is activated during aircraft engine operation. The aircrew control the flow of oxygen-enriched air through a flow control switch in the cockpit.

**b. Liquid Oxygen System.** The aircrew operates the LOX System through a flow control switch in the cockpit.

**c. Aviators Breathing Oxygen Contaminant Analyzer.** The ABO Contaminant Analyzer is operated by Navy Aircrew Survival Equipmentman (PR) personnel with Navy Enlisted Classification (NEC) 7356 and Marine Corps personnel with Military Occupational Specialty (MOS) 6048 assigned to intermediate level maintenance Work Center 81C, Oxygen Regulator and Equipment Shop. Machinist's Mate (MM) personnel with NEC 4201 and Marine Corps personnel with MOS 6075 assigned to intermediate level maintenance Work Center 820, Oxygen/Nitrogen Generating Facility, also operate the ABO Contaminant Analyzer. The ABO Contaminant Analyzer is used as required with a minimum average operating time of 2.5 hours per week. (The manpower, personnel, and training requirements associated with Navy and Marine Corps personnel assigned to Work Center 820 are addressed in the Trailer Mounted Liquid Oxygen/Nitrogen Generating Plant NTSP identified in Part I paragraph M. of this document.)

## **2. Maintenance Concept**

### **a. On-Board Oxygen Generating System**

**(1) Organizational.** Organizational level maintenance is performed by Aviation Structural Mechanic (Safety Equipment) (AME), Marine Corps Aircraft Safety Equipment Mechanic, or contract maintenance personnel assigned to the Egress-Environmental Systems Shop, Work Center 13B.

**(a) Preventive Maintenance.** Preventive maintenance consists of functional tests every 56 days on F-14D Aircraft equipped with the CRU-99/A SSOM using the TTU-520A/E Aircraft Oxygen Test Set. Due to the high reliability demonstrated on the F/A-18C/D Aircraft, a similar inspection previously performed has been eliminated. The GGU-7/A Oxygen Concentrator is removed and forwarded to the intermediate level for the Inlet Filter change and functional check every 500 flight hours. The GGU-12/A Oxygen Concentrator is removed and forwarded to the intermediate level for the Inlet Filter change and functional check every 400 flight hours. Although the F/A-18 Aircraft concentrator undergoes intermediate level check during the aircraft Phase B and D inspections, it is also accomplished within the required 400 flight hour window. Additionally, preflight visual and functional testing of the CRU-82/P, CRU-88/P, and CRU-103/P Oxygen Regulators is performed every 30 days in accordance with NAVAIR 13-1-6.4, Aviation Crew Systems Oxygen Equipment Manual. OBOGS/OBIGGS preventive maintenance requirements for the MV-22 Aircraft will be prescribed in the MV-22 Maintenance Plan, which is currently pending validation and final approval.

**(b) Corrective Maintenance.** Corrective maintenance consists of fault isolating plumbing, wiring, and Weapon Replaceable Assemblies (WRA) using Built-In Test and Common Support Equipment. Faulty WRAs are forwarded to the intermediate or depot maintenance level, as applicable, for repair.

**(2) Intermediate.** Intermediate level maintenance is performed by PRs with NEC 7356 and Marine Corps personnel with MOS 6048 assigned to Work Center 81C, Oxygen Regulator and Equipment Shop, of the Aircraft Intermediate Maintenance Department

(AIMD) and the Marine Aviation Logistics Squadron (MALS). Intermediate level maintenance for the MV-22 OBOGS/OBIGGS assembly has not yet been determined. The following table illustrates the intermediate maintenance level requirements by system:

| <b>SYSTEM</b>  | <b>INTERMEDIATE MAINTENANCE REQUIREMENTS</b>  |
|--|---|
| GGU-7/A Oxygen Concentrator (Preventive Maintenance)   | Inspect for material condition and repair as necessary. Remove and replace inlet filter element and bench test the oxygen concentrator every 500 flight hours.    |
| GGU-7/A Oxygen Concentrator (Corrective Maintenance)   | Fault isolate, remove and replace defective components as necessary, and perform bench test.  |
| GGU-7/A Sieve Bed, Rotary Valve Assembly, Oxygen Concentrator, Electric Box  | Forward to depot level for repair.  |
| GGU-7/A Plenum Assembly, Inlet Filter Assembly, Shroud Assembly  | Limited repair capability.  |
| GGU-12/A Oxygen Concentrator (Preventive Maintenance)  | Inspect for material condition and repair as necessary. Remove and replace inlet filter element and bench test the oxygen concentrator every 400 flight hours.    |
| GGU-12/A Oxygen Concentrator (Corrective Maintenance)  | Fault isolate, remove and replace defective components as necessary, and perform bench test.  |
| GGU-12/A Sieve Bed, Rotary Valve Assembly, Oxygen Concentrator   | Forward to depot level for repair.  |
| GGU-12/A Plenum Assembly, Inlet Filter Assembly, Top Shroud Assembly, Wrap Shroud Assembly, Bottom Shroud Assembly | Limited repair capability.  |
| CRU-99/A SSOM (Corrective Maintenance)   | Forward monitor to depot level for repair.  |
| CRU-82/P and CRU-88/P Oxygen Regulators (Preventive Maintenance)   | Perform “place in service” inspection in accordance with NAVAIR 13-1-6.4. Perform bench test of the regulator every 90 days in accordance with NAVAIR 13-1-6.4-2. |

| <b>SYSTEM</b>  | <b>INTERMEDIATE MAINTENANCE REQUIREMENTS</b>  |
|--|---|
| CRU-82/P and CRU-88/P Oxygen Regulators (Corrective Maintenance) | Fault isolate, remove and replace defective components as necessary, and perform bench test in accordance with NAVAIR 13-1-6.4-2.                                   |
| CRU-103/P Oxygen Regulator (Preventive Maintenance)              | Perform “place in service” inspection in accordance with NAVAIR 13-1-6.4-2. Perform bench test of the regulator every 90 days in accordance with NAVAIR 13-1-6.4-2. |
| CRU-103/P Oxygen Regulator (Corrective Maintenance)              | Fault isolate, remove and replace defective components as necessary, and perform bench test in accordance with NAVAIR 13-1-6.4-2.                                   |

(3) **Depot.** Litton Life Support, Davenport, Iowa, performs depot level maintenance and rework of OBOGS components.

(4) **Interim Maintenance.** NA

(5) **Life Cycle Maintenance Plan.** NA

#### **b. Liquid Oxygen System**

(1) **Organizational.** AME and Marine Corps Aircraft Safety Equipment Mechanic personnel assigned to the Egress-Environmental Systems Shop, Work Center 13B, perform organizational level maintenance.

(a) **Preventive Maintenance.** Preventive maintenance consists of forwarding the LOX converter to AIMD or MALS for test and check every 231 days. Additionally, preflight visual and functional testing of the CRU-79/P and CRU-103/P Oxygen Regulator is performed every 90 days in accordance with NAVAIR 13-1-6.4-2, Aviation Crew Systems Oxygen Equipment Manual.

(b) **Corrective Maintenance.** Corrective maintenance consists of fault isolating plumbing, wiring, and WRAs using Common Support Equipment. Faulty WRAs are forwarded to the intermediate or depot maintenance level, as applicable, for repair.

(2) **Intermediate.** PRs with NEC 7356 and Marine Corps personnel with MOS 6048 assigned to the AIMD or MALS Oxygen Regulator and Equipment Shop, Work Center 81C, perform intermediate level maintenance. The following table illustrates the intermediate maintenance level requirements by system:

| <b>SYSTEM</b>   | <b>INTERMEDIATE MAINTENANCE REQUIREMENTS</b>   |
|---|--|
| CRU-79/P Oxygen Regulators<br>(Preventive Maintenance)  | Perform “place in service” inspection in accordance with NAVAIR 13-1-6.4. Perform bench test of the regulator every 90 days in accordance with NAVAIR 13-1-6.4-2.    |
| CRU-79/P Oxygen Regulators<br>(Corrective Maintenance)  | Fault isolate, perform bench test, and adjust as necessary in accordance with NAVAIR 13-1-6.4-2.   |
| CRU-103/P Oxygen Regulator<br>(Preventive Maintenance)  | Perform “place in service” inspection in accordance with NAVAIR 13-1-6.4. Perform bench test of the regulator every 90 days in accordance with NAVAIR 13-1-6.4-2.    |
| CRU-103/P Oxygen Regulator<br>(Corrective Maintenance)  | Fault isolate, remove and replace defective components as necessary, and perform bench test in accordance with NAVAIR 13-1-6.4-2.                                    |
| GCU-24/A, GCU-29/A Liquid<br>Oxygen Converter<br>(Preventive Maintenance)   | Perform “place in service” inspection in accordance with NAVAIR 13-1-6.4-4. Perform bench test of LOX Converter every 224 days in accordance with NAVAIR 13-1-6.4-4. |
| GCU-24/A, GCU-29/A Liquid<br>Oxygen Converter<br>(Corrective Maintenance)   | Fault isolate, remove and replace defective components as necessary, and perform bench test in accordance with NAVAIR 13-1-6.4-4.                                    |
| MD-1, MD-2, CRU-52/A, 54/A,<br>55/A, 57/A, 72/A Aircraft Panel<br>Mounted Oxygen Regulators<br>(Preventive Maintenance) | Perform “place in service inspection” in accordance with NAVAIR 13-1-6.4-2. Perform bench test of the regulator every 224 days in accordance with NAVAIR 13-1-6.4-2. |
| MD-1, MD-2, CRU-52/A, 54/A,<br>55/A, 57/A, 72/A Aircraft Panel<br>Mounted Oxygen Regulators<br>(Corrective Maintenance) | Fault isolate, remove and replace defective components as necessary, and perform bench test in accordance with NAVAIR 13-1-6.4-2.                                    |
| 29255 Series Aircraft Panel<br>Mounted Oxygen Regulators<br>(Preventive Maintenance)                                    | Perform “place in service inspection” in accordance with NAVAIR 13-1-6.4. Perform bench test of the regulator in accordance with NAVAIR 13-1-6.4-2.                  |
| 29255 Series Aircraft Panel<br>Mounted Oxygen Regulators<br>(Corrective Maintenance)                                    | Fault isolate, remove and replace defective components as necessary, and perform bench test in accordance with NAVAIR 13-1-6.4-2.                                    |

(3) **Depot.** Naval Aviation Depot Jacksonville, Florida, and Essex Industries, Inc, perform depot level maintenance and rework of LOX Components.

(4) **Interim Maintenance.** NA

(5) **Life Cycle Maintenance Plan.** NA

c. **Aviators Breathing Oxygen Contaminant Analyzer.** Maintenance of the ABO Contaminant Analyzer is performed at two levels, intermediate and depot.

(1) **Organizational.** NA

(2) **Intermediate.** PRs with NEC 7356 and Marine Corps personnel with MOS 6048 assigned to Work Center 81C, Oxygen Regulator and Equipment Shop, perform intermediate maintenance on the ABO Contaminant Analyzer.

(a) **Preventive Maintenance.** Preventive maintenance consists of pre-operational inspections, replenishment of consumable items, adjustment of pressures, cleaning, servicing, and corrosion control.

(b) **Corrective Maintenance.** Corrective maintenance consists of fault isolation and removal and replacement of defective assemblies and components.

(3) **Depot.** Depot level maintenance of the ABO Contaminant Analyzer is performed by Nicolet Instrument Corporation, Madison, Wisconsin, and includes repair of components beyond the capability of intermediate level maintenance and equipment overhaul.

(4) **Interim Maintenance.** NA

(5) **Life Cycle Maintenance Plan.** NA

### 3. Manning Concept

a. **On-Board Oxygen Generating System.** Navy AMEs and Marine Corps Aircraft Safety Equipment Mechanics perform organizational level maintenance of OBOGS. Organizational level maintenance manpower, personnel, and training requirements associated with OBOGS are addressed in the individual aircraft NTSPs identified in Part I paragraph M. of this document. PRs with NEC 7356 and Marine Corps personnel with MOS 6048 maintain OBOGS components at the intermediate level. Existing intermediate maintenance manpower requirements will remain unchanged. No new NECs or MOSs are required.

b. **Liquid Oxygen Systems.** Navy AMEs and Marine Corps Aircraft Safety Equipment Mechanics perform organizational level maintenance of aircraft LOX Systems. Organizational level maintenance manpower, personnel, and training requirements associated with LOX Systems are addressed in the individual aircraft NTSPs identified in Part I paragraph M. of this document. PRs with NEC 7356 and Marine Corps personnel with MOS 6048 maintain LOX

System components at the intermediate level. Existing intermediate maintenance manpower requirements will remain unchanged. No new NECs or MOSs will be required.

**c. Aviators Breathing Oxygen Contaminant Analyzer.** The ABO Contaminant Analyzer is operated and maintained at the intermediate level by Navy PRs with NEC 7356 and Marine Corps personnel with MOS 6048. Existing intermediate maintenance manpower requirements will remain unchanged. No new NECs or MOSs are required.

**4. Training Concept.** All initial operator and maintenance training for oxygen systems currently employed have been completed. Initial training for new oxygen systems will either be conducted by the manufacturer, the contractor, or will be conducted by Navy personnel who will provide on-site indoctrination training to aircrew and maintenance personnel. Follow-on oxygen system operator training is conducted as part of general and aircraft-specific aircrew training via aviation physiology, aviation water survival, and Fleet Readiness Squadron training.

All initial training for the OBOGS, LOX System, and ABO Contaminant Analyzer has been completed.

Follow-on OBOGS organizational level maintenance is included in applicable Naval Air Maintenance Training Group Detachment (NAMTRAGRU DET) or Naval Air Maintenance Training Unit (NAMTRAU) aircraft organizational level maintenance training courses.

Follow-on OBOGS intermediate level maintenance training previously established at Maintenance Training Unit (MTU) 1038 NAMTRAU Lemoore, California, and MTU 1039 NAMTRAU Oceana, Virginia, has been discontinued. The OBOGS maintenance curricula is being revised and added to existing course *C-602-2028, LOX Converter Test Stand/LOX Converter and Survival Kit Repair*, which is part of the Aircrew Survival Equipment Intermediate Maintenance Pipeline at Naval Air Technical Training Center (NATTC) Pensacola, Florida. Intermediate level operator and maintenance training for the ABO Contaminant Analyzer is included in course *C-670-2018, Aviator's Breathing Oxygen Test Site Operator/Analyst*, which is part of the Aircrew Survival Equipment Intermediate Maintenance Pipeline at NATTC Pensacola.

The established training concept for most aviation maintenance training divides "A" School courses into two or more segments called *Core* and *Strand*. Many organizational level "C" School courses are also divided into separate *Initial* and *Career* training courses. "A" School *Core* courses include general knowledge and skills training for the particular rating, while "A" School *Strand* courses focus on the more specialized training requirements for that rating and a specific aircraft or equipment, based on the student's fleet activity destination. *Strand* training immediately follows *Core* training and is part of the "A" School. Upon completion of *Core* and *Strand* "A" Schools, graduates going to organizational level activities attend the appropriate *Initial* "C" School for additional specific training. *Initial* "C" School training is intended for students in paygrades E-4 and below. *Career* "C" School training is provided to organizational level personnel, E-5 and above, to enhance skills and knowledge within their field. "A" School, graduates going to intermediate level activities attend the appropriate intermediate level "C" School. Intermediate level "C" Schools are not separated into *Initial* and *Career* courses. NAOS

organizational and intermediate level maintenance training for PR and MOS 6048 personnel is established at PR Class A1 and intermediate level C1 schools. Marine Corps students are enrolled in both *Core* and *Strand* training as provided by the A1 course at this time.

It was decided at the April 2000 Maintenance Training Requirements Review (MTRR) conference to eliminate the *Core* and *Strand* training track concept in the PR Class A1 school, combining *C-602-2037, Aircrew Survival Equipment Intermediate Level Strand Class A1*, into *C-602-2035, Aircrew Survival Equipment Common Core Class A1*, and eliminating *C-602-2037* as a separate course. *C-602-2035* was also extended by ten days to include flight clothing fitting procedures, newly procured systems, and deleting obsolete equipment. Additionally, a proposal was accepted to divide the Survival Equipment phase of the course into two units, and include night vision systems; Chemical, Biological, and Radiological equipment; and a practical laboratory exercise.

Significant changes were approved to the PR Class C1 School *C-602-2040, Aircrew Survival Equipment Intermediate Maintenance Pipeline*, in the 1997 MTRR including incorporation of the CRU-103/P Oxygen Regulator, OBOGS, and the NACES Packing Press, adding a combined total of fifteen days to the existing training track. At the April 2000 MTRR, proposals to extend the course by three additional days to include the Helicopter Aircrew Breathing Device and delete the CRU-88/P Oxygen Regulator were also approved.

Planning was to have all accepted MTRR proposals incorporated into the training track and Ready for Training (RFT) no later than October 2001. This has not occurred; when updated information is available it will be included in updates to this document.

#### **a. Initial Training**

**(1) On-Board Oxygen Generating System.** Initial training for TECHEVAL and OPEVAL personnel was conducted in 1985 by the manufacturer at Clifton Precision Instrument (now Litton Life Support) in Davenport, Iowa. Initial organizational maintenance training for NAMTRAU instructors consisted of two courses conducted by the aircraft manufacturer in 1985. Initial intermediate maintenance training for NAMTRAU instructors was conducted in 1985 by Clifton Precision Instrument.

**(2) Liquid Oxygen System.** NA

**(3) Aviators Breathing Oxygen Contaminant Analyzer.** Nicolet Instrument Corporation, Madison, Wisconsin, provided initial training for OPEVAL and NATTC Pensacola instructor personnel. All initial training was completed in 1993.

#### **b. Follow-On Training**

**(1) On-Board Oxygen Generating System.** Follow-on training for OBOGS organizational maintenance is established by the specific aircraft community at their respective NAMTRAGRU DET or NAMTRAU. The RFT date for OBOGS organizational level training was June 1993. The tracks for the applicable aircraft are listed below and detailed in the

respective aircraft NTSPs listed in Part I paragraph M. of this document. The T-45A/B and T-6A Aircraft do not apply since they are contractor maintained.

| AIRCRAFT  | CIN          | TITLE   |
|-----------|--------------|---|
| AV-8B     | M-602-0163   | AV-8B Aircraft Safety Equipment Mechanic Organizational Maintenance                           |
| F-14D     | D-602-1667   | F-14 Environmental/Escapes Systems Initial Organizational Maintenance                         |
| F/A-18C/D | D/E-602-0662 | F/A-18 Safety Equipment Initial Organizational Maintenance                                    |
| F/A-18E/F | E-602-0664   | F/A-18E/F Safety Equipment (Initial) Organizational Maintenance                               |
| MV-22     | M-602-XXX2   | MV-22 Environmental Control Miscellaneous Utilities/Egress Systems Organizational Maintenance |

Follow-on training for OBOGS intermediate maintenance was originally established at MTU 1038 NAMTRAU Lemoore and MTU 1039 NAMTRAU Cecil Field, Florida, (currently located at Oceana), in June 1993 as a stand-alone course *C-602-4892, On-Board Oxygen Generating System Intermediate Maintenance*. The content of this course (*C-602-4892*) is being integrated within course *C-602-2028, LOX Converter Test Stand/LOX Converter and Survival Kit Unit Repair*, which is part of track *C-602-2040, Aircrew Survival Equipment Intermediate Maintenance Pipeline*. Note that course *C-602-4892* is currently unavailable due to the course rewrite. The revised course is scheduled to be RFT in Fiscal Year (FY) 02. The exact date of the course revision completion is not currently known. When this information becomes available it will be included in updates to this document. The addition of OBOGS will not affect the length of the current training track.

OBOGS refresher continuation training for ejection seat equipped aircraft is conducted at various Aviation Survival Training Centers and is fully documented in the Naval Aviation Survival Training Program NTSP identified in Part I paragraph M. of this document.

**(2) Liquid Oxygen System.** Follow-on training for LOX Converter operation and maintenance is provided in course *C-602-2028, LOX Converter Test Stand/LOX Converter and SKU Repair*, which is also part of track *C-602-2040, Aircrew Survival Equipment Intermediate Maintenance Pipeline*.

**(3) Aviators Breathing Oxygen Contaminant Analyzer.** Follow-on ABO Contaminant Analyzer operator and maintenance training is provided in course *C-670-2018, Aviators Breathing Oxygen Test Site Operator/Analyst*, which is also part of track *C-602-2040, Aircrew Survival Equipment Intermediate Maintenance Pipeline*.

|                       |   |
|-----------------------|---|
| <b>Title .....</b>    | <b>Aircrew Survival Equipment Intermediate Maintenance Pipeline</b>   |
| CIN .....             | C-602-2040, Path 2  |
| Model Manager ...     | NATTC Pensacola   |
| Description .....     | <p>This track provides training to the Aircrew Survival Equipment maintainer, including:</p> <ul style="list-style-type: none"> <li>◦ A/E 24T-226 ABO Contaminant Analyzer Operation And Maintenance</li> <li>◦ LOX Converter Test Stand Operation and Maintenance</li> <li>◦ LOX Converter Maintenance</li> <li>◦ Flowmeter Repair and Calibration</li> <li>◦ Regulator Valve Repair</li> <li>◦ IT-71 Oxygen Test Stand Operation and Maintenance</li> <li>◦ Purging Device Operation and Maintenance</li> <li>◦ Oxygen Monitor Repair</li> <li>◦ Oxygen Concentrator Repair</li> <li>◦ Nitrogen Regulator Repair</li> <li>◦ Oxygen and Nitrogen Cylinder Servicing and Handling</li> <li>◦ Pressurized Parachute Packing</li> <li>◦ Naval Aircrew Common Ejection Seat Packing Press Operation and Maintenance</li> </ul> <p>Upon completion, the student will be able to maintain and repair aircrew survival equipment in a shop environment under limited supervision.</p> |
| Location .....        | NATTC Pensacola   |
| Length .....          | 54 days   |
| RFT date .....        | Currently available; RFT in FY02 with OBOGS.  |
| Skill identifier..... | PR 7356   |
| TTE/TD.....           | See elements IV.A.1 and IV.A.2  |
| Prerequisite.....     | <ul style="list-style-type: none"> <li>◦ C-602-2035, Aircrew Survival Equipmentman Common Core Class A1</li> <li>◦ C-602-2037, Aircrew Survival Equipmentman Intermediate Level Strand Class A1</li> </ul>  |

**Note 1:** Marine Corps personnel receive MOS 6075, Cryogenics Equipment Operator, by successfully completing course *M-750-6075* at MTU 1006 Cherry Point, North Carolina. Navy MMs receive NEC 4201, Cryogenics Technician Overseas Shore Based Equipment Operator/Maintainer, by successfully completing course *M-750-9901* at MTU 1006 Cherry Point. The use of the A/E 240T-226

ABO Contaminant Analyzer is contained in both of these courses. This training is addressed in detail in the Trailer Mounted Liquid Oxygen/Nitrogen Generating Plant NTSP identified in Part I paragraph M of this document.

**Note 2:** Course C-602-2035, *Aircrew Survival Equipmentman Common Core Class A1* and C-602-2037, *Aircrew Survival Equipmentman Intermediate Level Strand Class A1* are currently in the process of being combined into one course. This new course will be ready for training in FY02.

**c. Student Profiles**

| <b>SKILL IDENTIFIER</b> | <b>PREREQUISITE SKILL AND KNOWLEDGE REQUIREMENTS</b>   |
|-------------------------|--|
| PR 7356                 | <ul style="list-style-type: none"> <li>◦ C-602-2035, Aircrew Survival Equipmentman Common Core Class A1</li> <li>◦ C-602-2037, Aircrew Survival Equipmentman Intermediate Level Strand Class A1</li> </ul> |
| MOS 6048                | <ul style="list-style-type: none"> <li>◦ C-602-2035, Aircrew Survival Equipmentman Common Core Class A1</li> <li>◦ C-602-2037, Aircrew Survival Equipmentman Intermediate Level Strand Class A1</li> </ul> |

**d. Training Pipeline.** No additional training pipelines will be required.

**I. ONBOARD (IN-SERVICE) TRAINING**

**1. Proficiency or Other Training Organic to the New Development**

**a. Maintenance Training Improvement Program.** Current planning is to adopt the Aviation Maintenance Training Continuum System (AMTCS) concepts to replace Maintenance Training Improvement Program (MTIP). AMTCS is scheduled to begin full implementation for fleet deployment in FY02.

**b. Aviation Maintenance Training Continuum System.** AMTCS will provide career path training to the Sailor or Marine from their initial service entry to the end of their military career. AMTCS concepts will provide an integrated system that will satisfy the training and administrative requirements of both the individual and the organization. The benefits will be manifested in the increased effectiveness of the technicians and the increased efficiencies of the management of the training business process. Where appropriate, capitalizing on technological advances and integrating systems and processes can provide the right amount of training at the right time, thus meeting the CNO’s mandated “just-in-time” training approach.

Technology investments enable the development of several state-of-the-art training and administrative tools: Interactive Multimedia Instruction for the technicians in the Fleet in the form of Interactive Courseware with Computer Managed Instruction and Computer Aided Instruction for the schoolhouse.

Included in the AMTCS development effort is the Aviation Maintenance Training Continuum System - Software Module, which provides testing [Test and Evaluation], recording [Electronic Certification Qualification Records], and a Feedback system. The core functionality of these AMTCS tools are based and designed around the actual maintenance-related tasks the technicians perform, and the tasks are stored and maintained in a Master Task List data bank. These tools are procured and fielded with appropriate COTS hardware and software, i.e., Fleet Training Devices - Laptops, PCs, Electronic Classrooms, Learning Resource Centers, operating software, and network software and hardware.

Upon receipt of direction from OPNAV (N789H), AMTCS concepts are to be implemented and the new tools integrated into the daily training environment of all participating, aviation activities and supporting elements. AMTCS will serve as the standard training system for aviation maintenance training within the Navy and Marine Corps, and is planned to supersede the existing MTIP and Maintenance Training Management and Evaluation Program (MATMEP) programs.

**2. Personnel Qualification Standards. NA**

**3. Other Onboard or In-Service Training Packages.** Marine Corps onboard training is based on the current series of MCO P4790.12, Individual Training Standards System and MATMEP. This program is designed to meet Marine Corps, as well as Navy OPNAVINST 4790.2 series, maintenance training requirements. It is a performance-based, standardized, level-progressive, documentable, training management and evaluation program. It identifies and prioritizes task inventories by MOS through a front-end analysis process that identifies task, skill, and knowledge requirements of each MOS. MTIP questions coupled to MATMEP tasks will help identify training deficiencies that can be enhanced with refresher training. (MATMEP is planned to be replaced by AMTCS.)

**J. LOGISTICS SUPPORT**

**1. Manufacturer and Contract Numbers**

| <b>CONTRACT NUMBER</b>                | <b>MANUFACTURER</b>                         | <b>ADDRESS</b>                            |
|---------------------------------------|---|---|
| N62269-83-C-0204<br>(AV-8 OBOGS only) | Litton Life Support<br>Litton Systems, Inc. | P.O. Box 4508<br>Davenport, IA 52808-4508 |
| N00019-86-C-0182<br>(All other OBOGS) | Litton Life Support<br>Litton Systems, Inc. | P.O. Box 4508<br>Davenport, IA 52808-4508 |

| <b>CONTRACT NUMBER</b>                         | <b>MANUFACTURER</b>            | <b>ADDRESS</b>                              |
|--|--------------------------------|---|
| N68335-92-C-0186<br>(ABO Contaminant Analyzer) | Nicolet Instrument Corporation | 52252 Verona Road<br>Madison, WI 53744-4451 |

## **2. Program Documentation**

**a. On-Board Oxygen Generating System.** The Integrated Logistics Support Plan (ILSP) AV-ILSP-229 was approved on 15 February 1984, and revised 20 July 1990.

**b. Liquid Oxygen System.** NA

**c. Aviators Breathing Oxygen Contaminant Analyzer.** A Users Logistics Support Summary, Naval Air Warfare Center Aircraft Division Lakehurst (NAWCADLKE)-ULSS-91015, was published in November 1995.

## **3. Technical Data Plan**

**a. On-Board Oxygen Generating System.** Naval Air Training and Operating Procedures Standardization manual changes for all applicable aircraft have been updated to include OBOGS. Organizational Maintenance Instruction Manuals, Illustrated Parts Breakdowns, and Maintenance Requirement Cards have been updated to include OBOGS. The intermediate and depot maintenance aircraft manuals have been updated to include the OBOGS concentrator, monitor, and regulator. Maintenance requirements for OBOGS components and regulators including test set/stand operation are found in NAVAIR 13-1-6.4-2 and 13-1-6.4-3. Refer to element IV.B.3 of this NTSP for technical manual requirements at the training site.

**b. Liquid Oxygen System.** All publications required supporting the operation, maintenance, and training of LOX systems are in place. Maintenance requirements for LOX components and regulators including test set/stand operation are found in NAVAIR 13-1-6.4-2 and NAVAIR 13-1-6.4-4. Refer to element IV.B.3 of this NTSP for technical manual requirements at the training site.

**c. Aviators Breathing Oxygen Contaminant Analyzer.** All publications required to support the operation, maintenance, and training of the ABO Contaminant Analyzer were delivered as part of the new equipment delivery order package. Installation, operation, and maintenance requirements for the ABO Contaminant Analyzer are contained in NAVAIR 17-15-98. Additional program information is contained the ABO Surveillance Program Laboratory Manual and Field Guide, NAVAIR AG-332AO-GYD-000. Refer to element IV.B.3 of this NTSP for technical manual requirements at the training site.

#### 4. Test Sets, Tools, and Test Equipment

**a. On-Board Oxygen Generating System.** Three types of test sets were developed for use specifically with the OBOGS, the TTU-520A/E Aircraft Oxygen System (AOS) Test Set, the TTU-452A/E and TTU-518A/E Oxygen Concentrator Test Set, and the Regulator/Monitor Test Set. The OBOGS Test Adapter Set was also developed specifically for use with the OBOGS. Refer to Part IV.A.1 of this NTSP for test sets, tools, and test equipment requirements at the training site.

**(1) Aircraft Oxygen System Test Set.** The TTU-520A/E AOS Test Set, part number 1582AS500-2, is a self-contained portable test unit with hoses and cables needed for functional testing and repair of the aircraft oxygen system (excluding the oxygen regulator). Testing is conducted in the cockpit of the aircraft at the organizational level of maintenance. The AOS Test Set is used to measure oxygen concentration in the product gas from the concentrator at high and low flow rates by conducting three tests:

- Measures analog or digital output voltage from the aircraft oxygen monitor and converts that value to indicate oxygen partial pressure
- Measures and indicates product gas delivery pressure from the concentrator
- Verifies proper operation of the oxygen monitor warning signal circuit and the continuity of the aircraft Polarographic oxygen monitor heater circuit

**(2) Oxygen Concentrator Test Set.** There are two models of the Oxygen Concentrator Test Set in the Navy inventory, the TTU-452A/E and TTU-518A/E. The TTU-452A/E (part number 1779AS100-2) is used to test the GGU-7A Concentrator. The TTU-518A/E (part number 1779AS500-2) can be used to test both the GGU-7/A and GGU-12/A concentrators. The test sets are self-contained test units with all required hoses, cables, filter assemblies, and exhaust muffler assemblies needed for functional testing and repair of oxygen concentrators.

**(3) Regulator/Monitor Test Set.** The Regulator/Monitor Test Set (part number 1780AS100-1) is a self-contained testing unit with all required hoses, cables, gauges, and valves needed to perform functional testing and to adjust the oxygen monitor and oxygen regulator. This test set is used to test CRU-83/A or CRU-91/A Polarographic Oxygen Monitors and the TTU-450/E and TTU-520/E organizational level test sets equipped with the Polarographic oxygen monitor. The TTU-520A/E AOS Test Set, which has been modified with the Solid State Oxygen Monitor (SESM), does not require this test set.

This test set was also designed to test the CRU-82/P Oxygen Regulator during deployment where the Oxygen Components Test Stand (1172AS100 or 1316AS100) was not available. The addition of cleaning requirements for the CRU-82/P Demand Valve exceeded this test set's capability to completely test and make the regulator Ready For Issue (RFI). NAVAIR (PMA202) has therefore rescinded the authority to test regulators on this test set. Upon completion of the SESM retrofit, the Regulator/Monitor Test Set will no longer be required and will be removed from the Navy inventory.

**(4) OBOGS Test Adapter Set.** The OBOGS Test Adapter Set (part number 74D470010-1001 and 75D470000-1001) consists of the major components, described in the following paragraphs, and assorted hoses and fittings to perform operational checks, leak checks, and purging of the OBOGS. These Test Adapter Sets are under strong consideration to be eliminated from the inventory and use the existing Oxygen Purge Cart to accomplish the tasks the test sets previously performed. Preliminary maintenance procedures for purging and leak checking the AV-8B, F/A-18, and T-45A OBOGS is under development.

**(a) OBOGS Adapter Tool.** Commonly known as the Ground Air Adapter, the OBOGS Adapter Tool (part number 3248AS100-1) is a fixture that contains a ball valve, a moisture remover, a pressure regulator, and a pressure gauge. It is used to regulate the air supply pressure being used to perform the test on the concentrator at the organizational maintenance level. This tool also removes the entrained moisture found in the air supply.

The OBOGS Adapter Tool has been redesigned due to inadequate moisture removal capacity and will be assigned part number 3248AS200-1. The improved adapter is a self-contained, dual-stage filtering system comprised of two high-efficiency filters, a high-flow regulator, and all necessary hoses and aircraft adapters. Although it was originally intended for use at the organizational level, it has been proven effective during testing at the intermediate level as well.

**(b) OBOGS Oxygen Clean Adapter.** The OBOGS Oxygen Clean Adapter (part number 3249AS100-2) is a fixture that contains a ball valve, a pressure gauge, a flexible metal hose, and various fittings. The adapter is used for regulating the flow of gaseous nitrogen into the product gas delivery subsystem during flow and leak checks.

**(c) OBOGS Test Adapter.** The OBOGS Test Adapter (part number 3249AS100-3) is a fixture that contains a ball valve, a pressure regulator, a pressure gauge, and various fittings. It is used for regulating input pressures while leak checking the OBOGS.

**b. Liquid Oxygen Systems.** Two models of the Oxygen Component Test Stand were developed for use with LOX System components, Model 1172AS100 and Model 1316AS100. Both models have incorporated adapters for OBOGS compatibility. The Oxygen Component Test Stand tests and evaluates miniature oxygen regulators as well as panel and console mounted oxygen regulators. The test stand consists of a nitrogen pressure source and a vacuum system. It includes the plumbing and instrumentation necessary to measure, test, and evaluate the performance and operating characteristics of oxygen system components at altitudes up to 50,000 feet. The latest change to the test stand is the incorporation of SEC 5430, which installs a digital manometer in support of the CRU-103/P Oxygen Regulator. Refer to element IV.A.1 of this NTSP for test sets, tools, and test equipment requirements at the training site.

**c. Aviators Breathing Oxygen Contaminant Analyzer.** The test sets, tools, and test equipment required to support ABO Contaminant Analyzer maintenance and training are identified in the installation, operation, and maintenance instructions for the ABO Contaminant

Analyzer, NAVAIR 17-15-98. Refer to element IV.A.1 of this NTSP for test sets, tools, and test equipment requirements at the training site.

## **5. Repair Parts**

**a. On-Board Oxygen Generating System.** Spares and repair parts for the OBOGS are available through normal supply channels and are managed by the NAVICP, Mechanicsburg, Pennsylvania. The Material Support Date (MSD) for OBOGS was achieved in 1986 and the Navy Support Date (NSD) was achieved in 1987.

**b. Liquid Oxygen Systems.** Spares and repair parts for the LOX Systems are available through normal supply channels and are managed by the NAVICP, Mechanicsburg.

**c. Aviators Breathing Oxygen Contaminant Analyzer.** Spares and repair parts for the ABO Contaminant Analyzer are available through normal supply channels and are managed by the NAVICP, Mechanicsburg. The MSD was September 1995 and the NSD was September 1996.

## **6. Human Systems Integration. NA**

# **K. SCHEDULES**

## **1. Installation and Delivery Schedules**

**a. On-Board Oxygen Generating System.** Retrofit installation of OBOGS into the AV-8B, T-45, F-14D, and F/A-18C/D (Lot 13 and up) has been completed. OBOGS is being installed in the F/A-18E/F, T-6A, and MV-22 aircraft during production.

**b. Liquid Oxygen System. NA**

**c. Aviators Breathing Oxygen Contaminant Analyzer.** Delivery and installation of the ABO Contaminant Analyzer was completed in June 1996.

## **2. Ready For Operational Use Schedule**

**a. On-Board Oxygen Generating System.** OBOGS are considered Ready For Operational Use upon installation in the aircraft.

**b. Liquid Oxygen Systems.** LOX Systems are considered Ready For Operational Use upon installation in the aircraft.

**c. Aviators Breathing Oxygen Contaminant Analyzer.** The ABO Contaminant Analyzer is Ready For Operational Use upon receipt, check out, and installation at each site.

### 3. Time Required to Install at Operational Sites

a. **On-Board Oxygen Generating System.** NA

b. **Liquid Oxygen Systems.** NA

c. **Aviators Breathing Oxygen Contaminant Analyzer.** The time required to install the ABO Contaminant Analyzer is approximately one week.

4. **Foreign Military Sales and Other Source Delivery Schedule.** For information concerning FMS of NAOS equipment contact the program office, NAVAIRSYSCOM PMA202D.

### 5. Training Device and Technical Training Equipment Delivery Schedule

a. **On-Board Oxygen Generating System.** No Training Devices (TD) are required to support OBOGS training. Technical Training Equipment (TTE) supporting OBOGS training has been relocated from NAMTRAU Lemoore to NATTC Pensacola. TTE requirements are identified in element IV.A.1 of this NTSP.

b. **Liquid Oxygen System.** All TD and TTE supporting LOX Systems training are currently available at the training site. TTE requirements are identified in element IV.A.1 of this NTSP.

c. **Aviators Breathing Oxygen Contaminant Analyzer.** No TDs are required to support ABO Contaminant Analyzer Training. All required TTE is currently available at the training site. TTE requirements are identified in element IV.A.1 of this NTSP.

### L. GOVERNMENT FURNISHED EQUIPMENT AND CONTRACTOR FURNISHED EQUIPMENT TRAINING REQUIREMENTS. NA

### M. RELATED NTSPs AND OTHER APPLICABLE DOCUMENTS

| DOCUMENT OR NTSP TITLE            | DOCUMENT OR NTSP NUMBER | PDA CODE | STATUS             |
|-----------------------------------|-------------------------|----------|--------------------|
| Aviation Life Support System      | N78-NTSP-A-50-9206A/D   | PMA202   | Draft<br>Aug 01    |
| Navy Aircrew Common Ejection Seat | N88-NTSP-A-50-8517C/A   | PMA211   | Approved<br>Jan 01 |

| <b>DOCUMENT<br/>OR NTSP TITLE</b>  | <b>DOCUMENT<br/>OR NTSP NUMBER</b> | <b>PDA<br/>CODE</b> | <b>STATUS</b>      |
|--|------------------------------------|---------------------|--------------------|
| AV-8B Harrier II Plus System   | N88-NTSP-A-50-8210D/A              | PMA257              | Approved<br>Sep 01 |
| Naval Aviation Survival Training Program   | N88-NTSP-A-50-9803/D               | PMA202              | Draft<br>Jun 99    |
| Navy Undergraduate Jet Flight Training System, T-45TS                                  | A-50-8703B/D                       | PMA273              | Draft<br>Feb 95    |
| F-14A/B/D Aircraft   | N88-NTSP-A-50-8511C/D              | PMA241              | Draft<br>Feb 01    |
| F/A-18 Aircraft  | N88-NTSP-A-50-7703H/P              | PMA265              | Proposed<br>Oct 01 |
| Joint Training System Plan for the V-22 Osprey   | N88-NTSP-A-50-8412D/D              | PMA275              | Draft<br>Nov 00    |
| Trailer Mounted Liquid Oxygen/Nitrogen Generating Plant                                | N88-NTSP-A-50-9401/A               | PMA260              | Approved<br>Apr 00 |
| Integrated Logistics Support Plan for the On-Board Oxygen Generating System            | AV-ILSP-229                        | PMA202              | Approved<br>Jul 90 |
| Users Logistics Support Summary for the Aviators Breathing Oxygen Contaminant Analyzer | NAWCADLKE-ULSS-91015               | PMA260              | Approved<br>Nov 95 |

## **PART II - BILLET AND PERSONNEL REQUIREMENTS**

The following elements are not affected by the NAOS and, therefore, are not included in Part II of this NTSP:

### II.A. Billet Requirements

II.A.2.b. Billets to be Deleted for Operational and Fleet Support Activities

II.A.3. Training Activities Instructor and Support Billet Requirements

**PART II - BILLET AND PERSONNEL REQUIREMENTS**

**II.A. BILLET REQUIREMENTS**

**II.A.1.a. OPERATIONAL AND FLEET SUPPORT ACTIVITY ACTIVATION SCHEDULE**

|  |                         |
|--|-------------------------|
| <b>SOURCE:</b> Total Force Manpower Management System  | <b>DATE:</b> 10/26/2001 |
| MCCDC Total Manpower Requirements Extract for MOS 6048 | 10/30/2001              |
| Aircraft Program Data File – Model Detail for MV-22B   | 10/24/2001              |

| <b>ACTIVITY, UIC</b>                 |       | <b>PFYs</b> | <b>CFY02</b> | <b>FY03</b> | <b>FY04</b> | <b>FY05</b> | <b>FY06</b> |
|--------------------------------------|-------|-------------|--------------|-------------|-------------|-------------|-------------|
| <b>OPERATIONAL ACTIVITIES - NAVY</b> |       |             |              |             |             |             |             |
| VFA-106 NAS Oceana                   | 09679 | 1           | 0            | 0           | 0           | 0           | 0           |
| VFA-203 NAS Cecil Field              | 09030 | 1           | 0            | 0           | 0           | 0           | 0           |
| VFA-125 NAS Lemoore                  | 09485 | 1           | 0            | 0           | 0           | 0           | 0           |
| VFA-201 JRB Fort Worth               | 09309 | 1           | 0            | 0           | 0           | 0           | 0           |
| VFA-204 JRB New Orleans              | 09032 | 1           | 0            | 0           | 0           | 0           | 0           |
| <b>TOTAL:</b>                        |       | <b>5</b>    | <b>0</b>     | <b>0</b>    | <b>0</b>    | <b>0</b>    | <b>0</b>    |
| <b>OPERATIONAL ACTIVITIES - USMC</b> |       |             |              |             |             |             |             |
| VMA-223 MCAS Cherry Point            | 09438 | 1           | 0            | 0           | 0           | 0           | 0           |
| VMA-231 MCAS Cherry Point            | 52948 | 1           | 0            | 0           | 0           | 0           | 0           |
| VMA-542 MCAS Cherry Point            | 52847 | 1           | 0            | 0           | 0           | 0           | 0           |
| VMAQ-1 MCAS Cherry Point             | 41345 | 1           | 0            | 0           | 0           | 0           | 0           |
| VMAQ-2 MCAS Cherry Point             | 42362 | 1           | 0            | 0           | 0           | 0           | 0           |
| VMAQ-3 MCAS Cherry Point             | 42363 | 1           | 0            | 0           | 0           | 0           | 0           |
| VMAQ-4 MCAS Cherry Point             | 67837 | 1           | 0            | 0           | 0           | 0           | 0           |
| VMAT-203 MCAS Cherry Point           | 45483 | 1           | 0            | 0           | 0           | 0           | 0           |
| VMFA(AW)-224 MCAS Beaufort           | 09439 | 1           | 0            | 0           | 0           | 0           | 0           |
| VMFA(AW)-332 MCAS Beaufort           | 09501 | 1           | 0            | 0           | 0           | 0           | 0           |
| VMFA(AW)-533 MCAS Beaufort           | 09193 | 1           | 0            | 0           | 0           | 0           | 0           |
| VMFA-115 MCAS Beaufort               | 09234 | 1           | 0            | 0           | 0           | 0           | 0           |
| VMFA-122 MCAS Beaufort               | 09407 | 1           | 0            | 0           | 0           | 0           | 0           |
| VMFA-142 NAS Atlanta                 | 67243 | 1           | 0            | 0           | 0           | 0           | 0           |
| VMFA-251 MCAS Beaufort               | 09241 | 1           | 0            | 0           | 0           | 0           | 0           |
| VMFA-312 MCAS Beaufort               | 09253 | 1           | 0            | 0           | 0           | 0           | 0           |
| VMFA-321 AFB Andrews                 | 67235 | 1           | 0            | 0           | 0           | 0           | 0           |
| VMGR-252 MCAS Cherry Point           | 09387 | 1           | 0            | 0           | 0           | 0           | 0           |
| VMGR-452 JRB Fort Stewart            | 55215 | 1           | 0            | 0           | 0           | 0           | 0           |
| VMGRT-253 MCAS Cherry Point          | 55251 | 1           | 0            | 0           | 0           | 0           | 0           |
| VMM-162 MCAS New River               | 09492 | 0           | 0            | 0           | 1           | 0           | 0           |
| VMM-261 MCAS New River               | 09441 | 0           | 0            | 0           | 0           | 1           | 0           |
| VMM-263 MCAS New River               | 09445 | 0           | 0            | 0           | 0           | 1           | 0           |
| VMM-264 MCAS New River               | 09374 | 0           | 0            | 0           | 0           | 0           | 1           |
| VMM-266 MCAS New River               | 53972 | 0           | 0            | 0           | 0           | 0           | 1           |
| VMMT-204 MCAS New River              | 52842 | 1           | 0            | 0           | 0           | 0           | 0           |
| VMA-211 MCAS Yuma                    | 09412 | 1           | 0            | 0           | 0           | 0           | 0           |
| VMA-214 MCAS Yuma                    | 09436 | 1           | 0            | 0           | 0           | 0           | 0           |
| VMA-311 MCAS Yuma                    | 09416 | 1           | 0            | 0           | 0           | 0           | 0           |
| VMA-513 MCAS Yuma                    | 09231 | 1           | 0            | 0           | 0           | 0           | 0           |
| VMFA(AW)-121 MCAS Miramar            | 09257 | 1           | 0            | 0           | 0           | 0           | 0           |
| VMFA(AW)-225 MCAS Miramar            | 09232 | 1           | 0            | 0           | 0           | 0           | 0           |
| VMFA(AW)-242 MCAS Miramar            | 09668 | 1           | 0            | 0           | 0           | 0           | 0           |

VMFA-112 JRB Fort Worth

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**II.A.1.a. OPERATIONAL AND FLEET SUPPORT ACTIVITY ACTIVATION SCHEDULE**

**SOURCE:** Total Force Manpower Management System  
MCCDC Total Manpower Requirements Extract for MOS 6048  
Aircraft Program Data File – Model Detail for MV-22B

**DATE:**10/26/2001  
10/30/2001  
10/24/2001

| ACTIVITY, UIC                               |       | PFYs | CFY02 | FY03 | FY04 | FY05 | FY06 |
|---|-------|------|-------|------|------|------|------|
| VMFA-134 MCAS Miramar                       | 09365 | 1    | 0     | 0    | 0    | 0    | 0    |
| VMFA-212 MCAS Iwakuni                       | 09434 | 1    | 0     | 0    | 0    | 0    | 0    |
| VMFA-232 MCAS Miramar                       | 09242 | 1    | 0     | 0    | 0    | 0    | 0    |
| VMFA-314 MCAS Miramar                       | 09230 | 1    | 0     | 0    | 0    | 0    | 0    |
| VMFA-323 MCAS Miramar                       | 09235 | 1    | 0     | 0    | 0    | 0    | 0    |
| VMFAT-101 MCAS Miramar                      | 09965 | 1    | 0     | 0    | 0    | 0    | 0    |
| VMGR-152 MCAS Futenma                       | 09443 | 1    | 0     | 0    | 0    | 0    | 0    |
| VMGR-234 JRB Fort Worth                     | 08344 | 1    | 0     | 0    | 0    | 0    | 0    |
| VMGR-352 Cherry Point                       | 09182 | 1    | 0     | 0    | 0    | 0    | 0    |
| <b>TOTAL:</b>                               |       | 38   | 0     | 0    | 1    | 2    | 2    |
| <b>FLEET SUPPORT ACTIVITIES - NAVY</b>      |       |      |       |      |      |      |      |
| AIMD NAS Brunswick                          | 44314 | 1    | 0     | 0    | 0    | 0    | 0    |
| AIMD NAS Jacksonville                       | 44319 | 1    | 0     | 0    | 0    | 0    | 0    |
| AIMD NAS Oceana                             | 44327 | 1    | 0     | 0    | 0    | 0    | 0    |
| AIMD NAS Roosevelt Roads                    | 44373 | 1    | 0     | 0    | 0    | 0    | 0    |
| AIMD NAS Sigonella                          | 44330 | 1    | 0     | 0    | 0    | 0    | 0    |
| AIMD USS Bataan (LHD 5)                     | 21879 | 1    | 0     | 0    | 0    | 0    | 0    |
| AIMD USS Dwight D. Eisenhower (CVN 69)      | 03369 | 1    | 0     | 0    | 0    | 0    | 0    |
| AIMD USS Enterprise (CVN 65)                | 03365 | 1    | 0     | 0    | 0    | 0    | 0    |
| AIMD USS George Washington (CVN 73)         | 21412 | 1    | 0     | 0    | 0    | 0    | 0    |
| AIMD USS Harry S. Truman (CVN 75)           | 21853 | 1    | 0     | 0    | 0    | 0    | 0    |
| AIMD USS Iwo Jima (LHD 7)                   | 23027 | 1    | 0     | 0    | 0    | 0    | 0    |
| AIMD USS John F. Kennedy (CV 67)            | 03367 | 1    | 0     | 0    | 0    | 0    | 0    |
| AIMD USS Kearsarge (LHD 3)                  | 21700 | 1    | 0     | 0    | 0    | 0    | 0    |
| AIMD USS Nassau (LHA 4)                     | 20725 | 1    | 0     | 0    | 0    | 0    | 0    |
| AIMD USS Ronald Reagan (CVN 76)             | 22178 | 0    | 0     | 1    | 0    | 0    | 0    |
| AIMD USS Saipan (LHA 2)                     | 20632 | 1    | 0     | 0    | 0    | 0    | 0    |
| AIMD USS Theodore Roosevelt (CVN 71)        | 21247 | 1    | 0     | 0    | 0    | 0    | 0    |
| AIMD USS Wasp (LHD 1)                       | 21560 | 1    | 0     | 0    | 0    | 0    | 0    |
| COMHSWINGLANT WTU                           | 48097 | 1    | 0     | 0    | 0    | 0    | 0    |
| COMSEACONWINGLANT WTU                       | 47989 | 1    | 0     | 0    | 0    | 0    | 0    |
| NAVSCOLSCOM NAS Pensacola                   | 62229 | 1    | 0     | 0    | 0    | 0    | 0    |
| NAVTEST WINGLANT NAS Patuxent River         | 39782 | 1    | 0     | 0    | 0    | 0    | 0    |
| Reserve AIMD NAF Washington D.C.            | 44492 | 1    | 0     | 0    | 0    | 0    | 0    |
| Reserve AIMD NAS Willow Grove               | 44493 | 1    | 0     | 0    | 0    | 0    | 0    |
| Sea OP DET MCAS Beaufort                    | 46961 | 1    | 0     | 0    | 0    | 0    | 0    |
| Sea OP DET NAS Jacksonville                 | 46965 | 1    | 0     | 0    | 0    | 0    | 0    |
| Sea OP DET NAS Oceana                       | 46963 | 1    | 0     | 0    | 0    | 0    | 0    |
| Strike Fighter Weapons School Atlantic, NAS | 47084 | 1    | 0     | 0    | 0    | 0    | 0    |
| AIMD MCBH Kaneohe Bay                       | 44312 | 1    | 0     | 0    | 0    | 0    | 0    |
| AIMD NAF Atsugi                             | 44323 | 1    | 0     | 0    | 0    | 0    | 0    |
| AIMD NAF Misawa                             | 44331 | 1    | 0     | 0    | 0    | 0    | 0    |
| AIMD NAS Lemoore                            | 44321 | 1    | 0     | 0    | 0    | 0    | 0    |
| AIMD USS Belleau Wood (LHA 3)               | 20633 | 1    | 0     | 0    | 0    | 0    | 0    |
| AIMD USS Bonhomme Richard (LHD 6)           | 22202 | 1    | 0     | 0    | 0    | 0    | 0    |

AIMD USS Boxer (LHD 4)

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**II.A.1.a. OPERATIONAL AND FLEET SUPPORT ACTIVITY ACTIVATION SCHEDULE**

**SOURCE:** Total Force Manpower Management System  
 MCCDC Total Manpower Requirements Extract for MOS 6048  
 Aircraft Program Data File – Model Detail for MV-22B

**DATE:**10/26/2001  
 10/30/2001  
 10/24/2001

| ACTIVITY, UIC                          |       | PFYs | CFY02 | FY03 | FY04 | FY05 | FY06 |
|--|-------|------|-------|------|------|------|------|
| AIMD USS Constellation (CV 64)         | 03364 | 1    | 0     | 0    | 0    | 0    | 0    |
| AIMD USS Essex (LHD 2)                 | 21533 | 1    | 0     | 0    | 0    | 0    | 0    |
| AIMD USS John C. Stennis (CVN 74)      | 21847 | 1    | 0     | 0    | 0    | 0    | 0    |
| AIMD USS Kitty Hawk (CV 63)            | 03363 | 1    | 0     | 0    | 0    | 0    | 0    |
| AIMD USS Abraham Lincoln (CVN 72)      | 21297 | 1    | 0     | 0    | 0    | 0    | 0    |
| AIMD USS Nimitz (CVN 68)               | 03368 | 1    | 0     | 0    | 0    | 0    | 0    |
| AIMD USS Peleliu (LHA 5)               | 20748 | 1    | 0     | 0    | 0    | 0    | 0    |
| AIMD USS Tarawa (LHA 1)                | 20550 | 1    | 0     | 0    | 0    | 0    | 0    |
| AIMD USS Carl Vinson (CVN 70)          | 20993 | 1    | 0     | 0    | 0    | 0    | 0    |
| Aircraft OP DET China Lake             | 47677 | 1    | 0     | 0    | 0    | 0    | 0    |
| COMAEWWINGPAC DET AIMD                 | 44328 | 1    | 0     | 0    | 0    | 0    | 0    |
| COMFAIRWESTPAC                         | 09356 | 1    | 0     | 0    | 0    | 0    | 0    |
| COMSEACONWINGPAC DET AIMD              | 44326 | 1    | 0     | 0    | 0    | 0    | 0    |
| COMVAQWINGPAC DET AIMD                 | 44329 | 1    | 0     | 0    | 0    | 0    | 0    |
| Naval Weapons Test Squadron China Lake | 39787 | 1    | 0     | 0    | 0    | 0    | 0    |
| Navy FTR WPNS School Fallon            | 52912 | 1    | 0     | 0    | 0    | 0    | 0    |
| Sea OP DET NAS Lemoore                 | 46964 | 1    | 0     | 0    | 0    | 0    | 0    |
| Sea OP DET NAS North Island            | 46968 | 1    | 0     | 0    | 0    | 0    | 0    |
| Van OP DET NAS Whidbey Island          | 31179 | 1    | 0     | 0    | 0    | 0    | 0    |
| <b>TOTAL:</b>                          |       | 53   | 0     | 1    | 0    | 0    | 0    |
| <b>FLEET SUPPORT ACTIVITIES - USMC</b> |       |      |       |      |      |      |      |
| MALS-14 MCAS Cherry Point              | 09114 | 1    | 0     | 0    | 0    | 0    | 0    |
| MALS-26 MCAS New River                 | 09167 | 1    | 0     | 0    | 0    | 0    | 0    |
| MALS-31 MCAS Beaufort                  | 09131 | 1    | 0     | 0    | 0    | 0    | 0    |
| MATSG-21 Pensacola                     | 67389 | 1    | 0     | 0    | 0    | 0    | 0    |
| MALS-11 MCAS Miramar                   | 09111 | 1    | 0     | 0    | 0    | 0    | 0    |
| MALS-12 MCAS Iwakuni                   | 09112 | 1    | 0     | 0    | 0    | 0    | 0    |
| MALS-13 MCAS Yuma                      | 57082 | 1    | 0     | 0    | 0    | 0    | 0    |
| MALS-16 MCAS Miramar                   | 55583 | 1    | 0     | 0    | 0    | 0    | 0    |
| MALS-36 MCAS Futenma                   | 09136 | 1    | 0     | 0    | 0    | 0    | 0    |
| MALS-41 JRB Fort Worth                 | 03007 | 1    | 0     | 0    | 0    | 0    | 0    |
| <b>TOTAL:</b>                          |       | 10   | 0     | 0    | 0    | 0    | 0    |

II.A.1.b. BILLETTS REQUIRED FOR OPERATIONAL AND FLEET SUPPORT ACTIVITIES

| ACTIVITY, UIC, PHASING INCREMENT         | BILLETS |     | DESIG/<br>RATING | PNEC/<br>PMOS | SNEC/<br>SMOS |
|--|---------|-----|------------------|---------------|---------------|
|  | OFF     | ENL |                  |               |               |
| OPERATIONAL ACTIVITIES - NAVY            |         |     |                  |               |               |
| VFA-106 NAS Oceana, 09679<br>USMC        | 0       | 1   | LCPL             | 6048          |               |
| ACTIVITY TOTAL:                          | 0       | 1   |                  |               |               |
| VFA-203 NAS Cecil Field, 09030<br>SELRES | 0       | 1   | PR3              | 7356          |               |
| ACTIVITY TOTAL:                          | 0       | 1   |                  |               |               |
| VFA-125 NAS Lemoore, 09485<br>USMC       | 0       | 1   | CPL              | 6048          |               |
| ACTIVITY TOTAL:                          | 0       | 1   |                  |               |               |
| VFA-201 JRB Fort Worth, 09309<br>SELRES  | 0       | 1   | PR3              | 7356          |               |
| ACTIVITY TOTAL:                          | 0       | 1   |                  |               |               |
| VFA-204 JRB New Orleans, 09032<br>SELRES | 0       | 1   | PR3              | 7356          |               |
| ACTIVITY TOTAL:                          | 0       | 1   |                  |               |               |
| OPERATIONAL ACTIVITIES - USMC            |         |     |                  |               |               |
| VMA-223 MCAS Cherry Point, 09438<br>USMC | 0       | 1   | LCPL             | 6048          |               |
| ACTIVITY TOTAL:                          | 0       | 1   |                  |               |               |
| VMA-231 MCAS Cherry Point, 52948<br>USMC | 0       | 1   | LCPL             | 6048          |               |
| ACTIVITY TOTAL:                          | 0       | 1   |                  |               |               |
| VMA-542 MCAS Cherry Point, 52847<br>USMC | 0       | 1   | LCPL             | 6048          |               |
| ACTIVITY TOTAL:                          | 0       | 1   |                  |               |               |

II.A.1.b. BILLETS REQUIRED FOR OPERATIONAL AND FLEET SUPPORT ACTIVITIES

| ACTIVITY, UIC, PHASING INCREMENT         | BILLETS  |          | DESIG/<br>RATING | PNEC/<br>PMOS | SNEC/<br>SMOS |
|--|----------|----------|------------------|---------------|---------------|
|  | OFF      | ENL      |                  |               |               |
| <b>VMAQ-1 MCAS Cherry Point, 41345</b>   |          |          |                  |               |               |
| USMC                                     | 0        | 1        | CPL              | 6048          |               |
|  | 0        | 2        | LCPL             | 6048          |               |
|  | 0        | 1        | SGT              | 6048          |               |
| <b>ACTIVITY TOTAL:</b>                   | <b>0</b> | <b>4</b> |                  |               |               |
| <b>VMAQ-2 MCAS Cherry Point, 42362</b>   |          |          |                  |               |               |
| USMC                                     | 0        | 1        | CPL              | 6048          |               |
|  | 0        | 2        | LCPL             | 6048          |               |
|  | 0        | 1        | SGT              | 6048          |               |
| <b>ACTIVITY TOTAL:</b>                   | <b>0</b> | <b>4</b> |                  |               |               |
| <b>VMAQ-3 MCAS Cherry Point, 42363</b>   |          |          |                  |               |               |
| USMC                                     | 0        | 1        | CPL              | 6048          |               |
|  | 0        | 2        | LCPL             | 6048          |               |
|  | 0        | 1        | SGT              | 6048          |               |
| <b>ACTIVITY TOTAL:</b>                   | <b>0</b> | <b>4</b> |                  |               |               |
| <b>VMAQ-4 MCAS Cherry Point, 67837</b>   |          |          |                  |               |               |
| USMC                                     | 0        | 1        | CPL              | 6048          |               |
|  | 0        | 2        | LCPL             | 6048          |               |
|  | 0        | 1        | SGT              | 6048          |               |
| <b>ACTIVITY TOTAL:</b>                   | <b>0</b> | <b>4</b> |                  |               |               |
| <b>VMAT-203 MCAS Cherry Point, 45483</b> |          |          |                  |               |               |
| USMC                                     | 0        | 1        | CPL              | 6048          |               |
|  | 0        | 1        | LCPL             | 6048          |               |
|  | 0        | 2        | SGT              | 6048          |               |
| <b>ACTIVITY TOTAL:</b>                   | <b>0</b> | <b>4</b> |                  |               |               |
| <b>VMFA(AW)-224 MCAS Beaufort, 09439</b> |          |          |                  |               |               |
| USMC                                     | 0        | 1        | CPL              | 6048          |               |
|  | 0        | 1        | LCPL             | 6048          |               |
| <b>ACTIVITY TOTAL:</b>                   | <b>0</b> | <b>2</b> |                  |               |               |
| <b>VMFA(AW)-332 MCAS Beaufort, 09501</b> |          |          |                  |               |               |
| USMC                                     | 0        | 1        | CPL              | 6048          |               |
|  | 0        | 1        | LCPL             | 6048          |               |
| <b>ACTIVITY TOTAL:</b>                   | <b>0</b> | <b>2</b> |                  |               |               |

II.A.1.b. BILLETTS REQUIRED FOR OPERATIONAL AND FLEET SUPPORT ACTIVITIES

| ACTIVITY, UIC, PHASING INCREMENT         | BILLETTS |     | DESIG/<br>RATING | PNEC/<br>PMOS | SNEC/<br>SMOS |
|--|----------|-----|------------------|---------------|---------------|
|  | OFF      | ENL |                  |               |               |
| <b>VMFA(AW)-533 MCAS Beaufort, 09193</b> |          |     |                  |               |               |
| USMC                                     | 0        | 1   | CPL              | 6048          |               |
|  | 0        | 1   | LCPL             | 6048          |               |
| <b>ACTIVITY TOTAL:</b>                   | 0        | 2   |                  |               |               |
| <b>VMFA-115 MCAS Beaufort, 09234</b>     |          |     |                  |               |               |
| USMC                                     | 0        | 1   | LCPL             | 6048          |               |
| <b>ACTIVITY TOTAL:</b>                   | 0        | 1   |                  |               |               |
| <b>VMFA-122 MCAS Beaufort, 09407</b>     |          |     |                  |               |               |
| USMC                                     | 0        | 1   | LCPL             | 6048          |               |
| <b>ACTIVITY TOTAL:</b>                   | 0        | 1   |                  |               |               |
| <b>VMFA-142 NAS Atlanta, 67243</b>       |          |     |                  |               |               |
| USMC                                     | 0        | 1   | LCPL             | 6048          |               |
| <b>ACTIVITY TOTAL:</b>                   | 0        | 1   |                  |               |               |
| <b>VMFA-251 MCAS Beaufort, 09241</b>     |          |     |                  |               |               |
| USMC                                     | 0        | 1   | LCPL             | 6048          |               |
| <b>ACTIVITY TOTAL:</b>                   | 0        | 1   |                  |               |               |
| <b>VMFA-312 MCAS Beaufort, 09253</b>     |          |     |                  |               |               |
| USMC                                     | 0        | 1   | LCPL             | 6048          |               |
| <b>ACTIVITY TOTAL:</b>                   | 0        | 1   |                  |               |               |
| <b>VMFA-321 AFB Andrews, 67235</b>       |          |     |                  |               |               |
| USMC                                     | 0        | 1   | LCPL             | 6048          |               |
| <b>ACTIVITY TOTAL:</b>                   | 0        | 1   |                  |               |               |
| <b>VMGR-252 MCAS Cherry Point, 09387</b> |          |     |                  |               |               |
| USMC                                     | 0        | 1   | CPL              | 6048          |               |
|  | 0        | 2   | LCPL             | 6048          |               |
| <b>ACTIVITY TOTAL:</b>                   | 0        | 3   |                  |               |               |

II.A.1.b. BILLETTS REQUIRED FOR OPERATIONAL AND FLEET SUPPORT ACTIVITIES

| ACTIVITY, UIC, PHASING INCREMENT                     | BILLETS  |          | DESIG/<br>RATING | PNEC/<br>PMOS | SNEC/<br>SMOS |
|--|----------|----------|------------------|---------------|---------------|
|  | OFF      | ENL      |                  |               |               |
| <b>VMGR-452 JRB Fort Stewart, 55215</b>              |          |          |                  |               |               |
| USMC   | 0        | 1        | CPL              | 6048          |               |
|  | 0        | 2        | LCPL             | 6048          |               |
| SMCR   | 0        | 1        | CPL              | 6048          |               |
| <b>ACTIVITY TOTAL:</b>                               | <b>0</b> | <b>4</b> |                  |               |               |
| <b>VMGRT-253 MCAS Cherry Point, 55251</b>            |          |          |                  |               |               |
| USMC   | 0        | 1        | SGT              | 6048          |               |
| <b>ACTIVITY TOTAL:</b>                               | <b>0</b> | <b>1</b> |                  |               |               |
| <b>VMM-162 MCAS New River, 09492, FY04 Increment</b> |          |          |                  |               |               |
| USMC   | 0        | 2        | LCPL             | 6048          |               |
| <b>ACTIVITY TOTAL:</b>                               | <b>0</b> | <b>2</b> |                  |               |               |
| <b>VMM-264 MCAS New River, 09374, FY06 Increment</b> |          |          |                  |               |               |
| USMC   | 0        | 2        | LCPL             | 6048          |               |
| <b>ACTIVITY TOTAL:</b>                               | <b>0</b> | <b>2</b> |                  |               |               |
| <b>VMM-266 MCAS New River, 53972, FY06 Increment</b> |          |          |                  |               |               |
| USMC   | 0        | 2        | LCPL             | 6048          |               |
| <b>ACTIVITY TOTAL:</b>                               | <b>0</b> | <b>2</b> |                  |               |               |
| <b>VMMT-204 MCAS New River, 52842</b>                |          |          |                  |               |               |
| USMC   | 0        | 1        | CPL              | 6048          |               |
|  | 0        | 1        | LCPL             | 6048          |               |
| <b>ACTIVITY TOTAL:</b>                               | <b>0</b> | <b>2</b> |                  |               |               |
| <b>VMA-211 MCAS Yuma, 09412</b>                      |          |          |                  |               |               |
| USMC   | 0        | 1        | LCPL             | 6048          |               |
| <b>ACTIVITY TOTAL:</b>                               | <b>0</b> | <b>1</b> |                  |               |               |
| <b>VMA-214 MCAS Yuma, 09436</b>                      |          |          |                  |               |               |
| USMC   | 0        | 1        | LCPL             | 6048          |               |
| <b>ACTIVITY TOTAL:</b>                               | <b>0</b> | <b>1</b> |                  |               |               |
| <b>VMA-311 MCAS Yuma, 09416</b>                      |          |          |                  |               |               |
| USMC   | 0        | 1        | LCPL             | 6048          |               |

ACTIVITY TOTAL:

0 1

II.A.1.b. BILLETTS REQUIRED FOR OPERATIONAL AND FLEET SUPPORT ACTIVITIES

| ACTIVITY, UIC, PHASING INCREMENT | BILLETTS |     | DESIG/<br>RATING | PNEC/<br>PMOS | SNEC/<br>SMOS |
|----------------------------------|----------|-----|------------------|---------------|---------------|
|                                  | OFF      | ENL |                  |               |               |
| VMA-513 MCAS Yuma, 09231         |          |     |                  |               |               |
| USMC                             | 0        | 1   | LCPL             | 6048          |               |
| ACTIVITY TOTAL:                  | 0        | 1   |                  |               |               |
| VMFA(AW)-121 MCAS Miramar, 09257 |          |     |                  |               |               |
| USMC                             | 0        | 1   | CPL              | 6048          |               |
|                                  | 0        | 1   | LCPL             | 6048          |               |
| ACTIVITY TOTAL:                  | 0        | 2   |                  |               |               |
| VMFA(AW)-225 MCAS Miramar, 09232 |          |     |                  |               |               |
| USMC                             | 0        | 1   | CPL              | 6048          |               |
|                                  | 0        | 1   | LCPL             | 6048          |               |
| ACTIVITY TOTAL:                  | 0        | 2   |                  |               |               |
| VMFA(AW)-242 MCAS Miramar, 09668 |          |     |                  |               |               |
| USMC                             | 0        | 1   | CPL              | 6048          |               |
|                                  | 0        | 1   | LCPL             | 6048          |               |
| ACTIVITY TOTAL:                  | 0        | 2   |                  |               |               |
| VMFA-112 JRB Fort Worth, 08954   |          |     |                  |               |               |
| USMC                             | 0        | 1   | LCPL             | 6048          |               |
| ACTIVITY TOTAL:                  | 0        | 1   |                  |               |               |
| VMFA-134 MCAS Miramar, 09365     |          |     |                  |               |               |
| USMC                             | 0        | 1   | LCPL             | 6048          |               |
| ACTIVITY TOTAL:                  | 0        | 1   |                  |               |               |
| VMFA-212 MCAS Iwakuni, 09434     |          |     |                  |               |               |
| USMC                             | 0        | 1   | LCPL             | 6048          |               |
| ACTIVITY TOTAL:                  | 0        | 1   |                  |               |               |
| VMFA-232 MCAS Miramar, 09242     |          |     |                  |               |               |
| USMC                             | 0        | 1   | LCPL             | 6048          |               |
| ACTIVITY TOTAL:                  | 0        | 1   |                  |               |               |
| VMFA-314 MCAS Miramar, 09230     |          |     |                  |               |               |
| USMC                             | 0        | 1   | LCPL             | 6048          |               |
| ACTIVITY TOTAL:                  | 0        | 1   |                  |               |               |



II.A.1.b. BILLETS REQUIRED FOR OPERATIONAL AND FLEET SUPPORT ACTIVITIES

| ACTIVITY, UIC, PHASING INCREMENT      | BILLETS  |          | DESIG/<br>RATING | PNEC/<br>PMOS | SNEC/<br>SMOS |
|---------------------------------------|----------|----------|------------------|---------------|---------------|
|                                       | OFF      | ENL      |                  |               |               |
| <b>VMFA-323 MCAS Miramar, 09235</b>   |          |          |                  |               |               |
| USMC                                  | 0        | 1        | LCPL             | 6048          |               |
| <b>ACTIVITY TOTAL:</b>                | <b>0</b> | <b>1</b> |                  |               |               |
| <b>VMFAT-101 MCAS Miramar, 09965</b>  |          |          |                  |               |               |
| USMC                                  | 0        | 2        | LCPL             | 6048          |               |
| <b>ACTIVITY TOTAL:</b>                | <b>0</b> | <b>2</b> |                  |               |               |
| <b>VMGR-152 MCAS Futenma, 09443</b>   |          |          |                  |               |               |
| USMC                                  | 0        | 1        | CPL              | 6048          |               |
|                                       | 0        | 1        | LCPL             | 6048          |               |
| <b>ACTIVITY TOTAL:</b>                | <b>0</b> | <b>2</b> |                  |               |               |
| <b>VMGR-234 JRB Fort Worth, 08344</b> |          |          |                  |               |               |
| USMC                                  | 0        | 1        | CPL              | 6048          |               |
|                                       | 0        | 2        | LCPL             | 6048          |               |
| SMCR                                  | 0        | 1        | CPL              | 6048          |               |
| <b>ACTIVITY TOTAL:</b>                | <b>0</b> | <b>4</b> |                  |               |               |
| <b>VMGR-352 Cherry Point, 09182</b>   |          |          |                  |               |               |
| USMC                                  | 0        | 1        | CPL              | 6048          |               |
|                                       | 0        | 1        | LCPL             | 6048          |               |
| <b>ACTIVITY TOTAL:</b>                | <b>0</b> | <b>2</b> |                  |               |               |
| FLEET SUPPORT ACTIVITIES - NAVY       |          |          |                  |               |               |
| <b>AIMD NAS Brunswick, 44314</b>      |          |          |                  |               |               |
| ACDU                                  | 0        | 1        | PR1              | 7356          |               |
|                                       | 0        | 1        | PR2              | 7356          |               |
|                                       | 0        | 1        | PR3              | 7356          |               |
| <b>ACTIVITY TOTAL:</b>                | <b>0</b> | <b>3</b> |                  |               |               |
| <b>AIMD NAS Jacksonville, 44319</b>   |          |          |                  |               |               |
| ACDU                                  | 0        | 1        | PR1              | 7356          |               |
|                                       | 0        | 2        | PR2              | 7356          |               |
|                                       | 0        | 3        | PR3              | 7356          |               |
| <b>ACTIVITY TOTAL:</b>                | <b>0</b> | <b>6</b> |                  |               |               |

II.A.1.b. BILLETS REQUIRED FOR OPERATIONAL AND FLEET SUPPORT ACTIVITIES

| ACTIVITY, UIC, PHASING INCREMENT                     | BILLETS  |          | DESIG/<br>RATING | PNEC/<br>PMOS | SNEC/<br>SMOS |
|--|----------|----------|------------------|---------------|---------------|
|  | OFF      | ENL      |                  |               |               |
| <b>AIMD NAS Oceana, 44327</b>                        |          |          |                  |               |               |
| ACDU   | 0        | 2        | PR1              | 7356          |               |
|  | 0        | 4        | PR2              | 7356          |               |
|  | 0        | 3        | PR3              | 7356          |               |
| <b>ACTIVITY TOTAL:</b>                               | <b>0</b> | <b>9</b> |                  |               |               |
| <b>AIMD NAS Roosevelt Roads, 44373</b>               |          |          |                  |               |               |
| ACDU   | 0        | 2        | PR1              | 7356          |               |
|  | 0        | 2        | PR2              | 7356          |               |
| <b>ACTIVITY TOTAL:</b>                               | <b>0</b> | <b>4</b> |                  |               |               |
| <b>AIMD NAS Sigonella, 44330</b>                     |          |          |                  |               |               |
| ACDU   | 0        | 1        | PR1              | 7356          |               |
|  | 0        | 2        | PR2              | 7356          |               |
| <b>ACTIVITY TOTAL:</b>                               | <b>0</b> | <b>3</b> |                  |               |               |
| <b>AIMD USS Bataan (LHD 5), 21879</b>                |          |          |                  |               |               |
| ACDU   | 0        | 1        | PR2              | 7356          |               |
| <b>ACTIVITY TOTAL:</b>                               | <b>0</b> | <b>1</b> |                  |               |               |
| <b>AIMD USS Dwight D. Eisenhower (CVN 69), 03369</b> |          |          |                  |               |               |
| ACDU   | 0        | 1        | PR1              | 7356          |               |
|  | 0        | 2        | PR2              | 7356          |               |
| <b>ACTIVITY TOTAL:</b>                               | <b>0</b> | <b>3</b> |                  |               |               |
| <b>AIMD USS Enterprise (CVN 65), 03365</b>           |          |          |                  |               |               |
| ACDU   | 0        | 1        | PR1              | 7356          |               |
|  | 0        | 2        | PR2              | 7356          |               |
| <b>ACTIVITY TOTAL:</b>                               | <b>0</b> | <b>3</b> |                  |               |               |
| <b>AIMD USS George Washington (CVN 73), 21412</b>    |          |          |                  |               |               |
| ACDU   | 0        | 1        | PR1              | 7356          |               |
|  | 0        | 2        | PR2              | 7356          |               |
| <b>ACTIVITY TOTAL:</b>                               | <b>0</b> | <b>3</b> |                  |               |               |
| <b>AIMD USS Harry S. Truman (CVN 75), 21853</b>      |          |          |                  |               |               |
| ACDU   | 0        | 1        | PR1              | 7356          |               |
|  | 0        | 2        | PR2              | 7356          |               |
| <b>ACTIVITY TOTAL:</b>                               | <b>0</b> | <b>3</b> |                  |               |               |



II.A.1.b. BILLETTS REQUIRED FOR OPERATIONAL AND FLEET SUPPORT ACTIVITIES

| ACTIVITY, UIC, PHASING INCREMENT                              | BILLETTS |     | DESIG/<br>RATING | PNEC/<br>PMOS | SNEC/<br>SMOS |
|---|----------|-----|------------------|---------------|---------------|
|   | OFF      | ENL |                  |               |               |
| <b>AIMD USS Iwo Jima (LHD 7), 23027</b>                       |          |     |                  |               |               |
| ACDU  | 0        | 1   | PR2              | 7356          |               |
| <b>ACTIVITY TOTAL:</b>  | 0        | 1   |                  |               |               |
| <b>AIMD USS John F. Kennedy (CV 67), 03367</b>                |          |     |                  |               |               |
| ACDU  | 0        | 1   | PR1              | 7356          |               |
|   | 0        | 2   | PR2              | 7356          |               |
| <b>ACTIVITY TOTAL:</b>  | 0        | 3   |                  |               |               |
| <b>AIMD USS Kearsarge (LHD 3), 21700</b>                      |          |     |                  |               |               |
| ACDU  | 0        | 1   | PR2              | 7356          |               |
| <b>ACTIVITY TOTAL:</b>  | 0        | 1   |                  |               |               |
| <b>AIMD USS Nassau (LHA 4), 20725</b>                         |          |     |                  |               |               |
| ACDU  | 0        | 1   | PR2              | 7356          |               |
| <b>ACTIVITY TOTAL:</b>  | 0        | 1   |                  |               |               |
| <b>AIMD USS Ronald Reagan (CVN 76), 22178, FY03 Increment</b> |          |     |                  |               |               |
| ACDU  | 0        | 1   | PR1              | 7356          |               |
|   | 0        | 2   | PR2              | 7356          |               |
| <b>ACTIVITY TOTAL:</b>  | 0        | 3   |                  |               |               |
| <b>AIMD USS Saipan (LHA 2), 20632</b>                         |          |     |                  |               |               |
| ACDU  | 0        | 1   | PR2              | 7356          |               |
| <b>ACTIVITY TOTAL:</b>  | 0        | 1   |                  |               |               |
| <b>AIMD USS Theodore Roosevelt (CVN 71), 21247</b>            |          |     |                  |               |               |
| ACDU  | 0        | 1   | PR1              | 7356          |               |
|   | 0        | 2   | PR2              | 7356          |               |
| <b>ACTIVITY TOTAL:</b>  | 0        | 3   |                  |               |               |
| <b>AIMD USS Wasp (LHD 1), 21560</b>                           |          |     |                  |               |               |
| ACDU  | 0        | 1   | PR2              | 7356          |               |
| <b>ACTIVITY TOTAL:</b>  | 0        | 1   |                  |               |               |

II.A.1.b. BILLETS REQUIRED FOR OPERATIONAL AND FLEET SUPPORT ACTIVITIES

| ACTIVITY, UIC, PHASING INCREMENT                  | BILLETS |     | DESIG/<br>RATING | PNEC/<br>PMOS | SNEC/<br>SMOS |
|---|---------|-----|------------------|---------------|---------------|
|   | OFF     | ENL |                  |               |               |
| <b>COMHSWINGLANT WTU, 48097</b>                   |         |     |                  |               |               |
| ACDU  | 0       | 1   | PR1              | 7356          |               |
| <b>ACTIVITY TOTAL:</b>                            | 0       | 1   |                  |               |               |
| <b>COMSEACONWINGLANT WTU, 47989</b>               |         |     |                  |               |               |
| ACDU  | 0       | 1   | PR1              | 7356          |               |
|   | 0       | 1   | PR2              | 7356          |               |
| <b>ACTIVITY TOTAL:</b>                            | 0       | 2   |                  |               |               |
| <b>NAVSCOLSCOM NAS Pensacola, 62229</b>           |         |     |                  |               |               |
| ACDU  | 0       | 1   | PR1              | 7356          |               |
| <b>ACTIVITY TOTAL:</b>                            | 0       | 1   |                  |               |               |
| <b>NAVTEST WINGLANT NAS Patuxent River, 39782</b> |         |     |                  |               |               |
| ACDU  | 0       | 1   | PR1              | 7356          |               |
| <b>ACTIVITY TOTAL:</b>                            | 0       | 1   |                  |               |               |
| <b>Reserve AIMD NAF Washington D.C., 44492</b>    |         |     |                  |               |               |
| TAR   | 0       | 1   | PR2              | 7356          |               |
| <b>ACTIVITY TOTAL:</b>                            | 0       | 1   |                  |               |               |
| <b>Reserve AIMD NAS Willow Grove, 44493</b>       |         |     |                  |               |               |
| TAR   | 0       | 1   | PR1              | 7356          |               |
|   | 0       | 1   | PR2              | 7356          |               |
| <b>ACTIVITY TOTAL:</b>                            | 0       | 2   |                  |               |               |
| <b>Sea OP DET MCAS Beaufort, 46961</b>            |         |     |                  |               |               |
| ACDU  | 0       | 1   | PR3              | 7356          |               |
| <b>ACTIVITY TOTAL:</b>                            | 0       | 1   |                  |               |               |
| <b>Sea OP DET NAS Jacksonville, 46965</b>         |         |     |                  |               |               |
| ACDU  | 0       | 5   | PR3              | 7356          |               |
| <b>ACTIVITY TOTAL:</b>                            | 0       | 5   |                  |               |               |
| <b>Sea OP DET NAS Oceana, 46963</b>               |         |     |                  |               |               |
| ACDU  | 0       | 4   | PR3              | 7356          |               |
| <b>ACTIVITY TOTAL:</b>                            | 0       | 4   |                  |               |               |

II.A.1.b. BILLETS REQUIRED FOR OPERATIONAL AND FLEET SUPPORT ACTIVITIES

| ACTIVITY, UIC, PHASING INCREMENT                                 | BILLETS  |          | DESIG/<br>RATING | PNEC/<br>PMOS | SNEC/<br>SMOS |
|--|----------|----------|------------------|---------------|---------------|
|  | OFF      | ENL      |                  |               |               |
| <b>Strike Fighter Weapons School Atlantic, NAS Oceana, 47084</b> |          |          |                  |               |               |
| ACDU   | 0        | 1        | PR1              | 7356          |               |
|  | 0        | 1        | PR3              | 7356          |               |
| <b>ACTIVITY TOTAL:</b>   | <b>0</b> | <b>2</b> |                  |               |               |
| <b>AIMD MCBH Kaneohe Bay, 44312</b>                              |          |          |                  |               |               |
| ACDU   | 0        | 1        | PR1              | 7356          |               |
|  | 0        | 4        | PR2              | 7356          |               |
|  | 0        | 1        | PR3              | 7356          |               |
| <b>ACTIVITY TOTAL:</b>   | <b>0</b> | <b>6</b> |                  |               |               |
| <b>AIMD NAF Atsugi, 44323</b>                                    |          |          |                  |               |               |
| ACDU   | 0        | 2        | PR1              | 7356          |               |
|  | 0        | 1        | PR2              | 7356          |               |
| <b>ACTIVITY TOTAL:</b>   | <b>0</b> | <b>3</b> |                  |               |               |
| <b>AIMD NAF Misawa, 44331</b>                                    |          |          |                  |               |               |
| ACDU   | 0        | 2        | PR1              | 7356          |               |
|  | 0        | 1        | PR2              | 7356          |               |
| <b>ACTIVITY TOTAL:</b>   | <b>0</b> | <b>3</b> |                  |               |               |
| <b>AIMD NAS Lemoore, 44321</b>                                   |          |          |                  |               |               |
| ACDU   | 0        | 2        | PR1              | 7356          |               |
|  | 0        | 4        | PR2              | 7356          |               |
|  | 0        | 1        | PR3              | 7356          |               |
| <b>AIMD NAS Lemoore, 44321, FY04 Increment</b>                   |          |          |                  |               |               |
| ACDU   | 0        | 1        | PR1              | 7356          |               |
| <b>ACTIVITY TOTAL:</b>   | <b>0</b> | <b>8</b> |                  |               |               |
| <b>AIMD USS Belleau Wood (LHA 3), 20633</b>                      |          |          |                  |               |               |
| ACDU   | 0        | 1        | PR2              | 7356          |               |
| <b>ACTIVITY TOTAL:</b>   | <b>0</b> | <b>1</b> |                  |               |               |
| <b>AIMD USS Bonhomme Richard (LHD 6), 22202</b>                  |          |          |                  |               |               |
| ACDU   | 0        | 1        | PR2              | 7356          |               |
| <b>ACTIVITY TOTAL:</b>   | <b>0</b> | <b>1</b> |                  |               |               |

II.A.1.b. BILLETS REQUIRED FOR OPERATIONAL AND FLEET SUPPORT ACTIVITIES

| ACTIVITY, UIC, PHASING INCREMENT                | BILLETS  |          | DESIG/<br>RATING | PNEC/<br>PMOS | SNEC/<br>SMOS |
|---|----------|----------|------------------|---------------|---------------|
|   | OFF      | ENL      |                  |               |               |
| <b>AIMD USS Boxer (LHD 4), 21808</b>            |          |          |                  |               |               |
| ACDU  | 0        | 1        | PR2              | 7356          |               |
| <b>ACTIVITY TOTAL:</b>                          | <b>0</b> | <b>1</b> |                  |               |               |
| <b>AIMD USS Constellation (CV 64), 03364</b>    |          |          |                  |               |               |
| ACDU  | 0        | 1        | PR1              | 7356          |               |
|   | 0        | 2        | PR2              | 7356          |               |
| <b>ACTIVITY TOTAL:</b>                          | <b>0</b> | <b>3</b> |                  |               |               |
| <b>AIMD USS Essex (LHD 2), 21533</b>            |          |          |                  |               |               |
| ACDU  | 0        | 1        | PR2              | 7356          |               |
| <b>ACTIVITY TOTAL:</b>                          | <b>0</b> | <b>1</b> |                  |               |               |
| <b>AIMD USS John C. Stennis (CVN 74), 21847</b> |          |          |                  |               |               |
| ACDU  | 0        | 1        | PR1              | 7356          |               |
|   | 0        | 2        | PR2              | 7356          |               |
| <b>ACTIVITY TOTAL:</b>                          | <b>0</b> | <b>3</b> |                  |               |               |
| <b>AIMD USS Kitty Hawk (CV 63), 03363</b>       |          |          |                  |               |               |
| ACDU  | 0        | 1        | PR1              | 7356          |               |
|   | 0        | 2        | PR2              | 7356          |               |
|   | 0        | 2        | PR3              | 7356          |               |
| <b>ACTIVITY TOTAL:</b>                          | <b>0</b> | <b>5</b> |                  |               |               |
| <b>AIMD USS Abraham Lincoln (CVN 72), 21297</b> |          |          |                  |               |               |
| ACDU  | 0        | 1        | PR1              | 7356          |               |
|   | 0        | 2        | PR2              | 7356          |               |
| <b>ACTIVITY TOTAL:</b>                          | <b>0</b> | <b>3</b> |                  |               |               |
| <b>AIMD USS Nimitz (CVN 68), 03368</b>          |          |          |                  |               |               |
| ACDU  | 0        | 1        | PR1              | 7356          |               |
|   | 0        | 2        | PR2              | 7356          |               |
| <b>ACTIVITY TOTAL:</b>                          | <b>0</b> | <b>3</b> |                  |               |               |
| <b>AIMD USS Peleliu (LHA 5), 20748</b>          |          |          |                  |               |               |
| ACDU  | 0        | 1        | PR2              | 7356          |               |
| <b>ACTIVITY TOTAL:</b>                          | <b>0</b> | <b>1</b> |                  |               |               |

II.A.1.b. BILLETTS REQUIRED FOR OPERATIONAL AND FLEET SUPPORT ACTIVITIES

| ACTIVITY, UIC, PHASING INCREMENT                     | BILLETS  |           | DESIG/<br>RATING | PNEC/<br>PMOS | SNEC/<br>SMOS |
|--|----------|-----------|------------------|---------------|---------------|
|  | OFF      | ENL       |                  |               |               |
| <b>AIMD USS Tarawa (LHA 1), 20550</b>                |          |           |                  |               |               |
| ACDU   | 0        | 1         | PR2              | 7356          |               |
| <b>ACTIVITY TOTAL:</b>                               | <b>0</b> | <b>1</b>  |                  |               |               |
| <b>AIMD USS Carl Vinson (CVN 70), 20993</b>          |          |           |                  |               |               |
| ACDU   | 0        | 1         | PR1              | 7356          |               |
|  | 0        | 2         | PR2              | 7356          |               |
| <b>ACTIVITY TOTAL:</b>                               | <b>0</b> | <b>3</b>  |                  |               |               |
| <b>Aircraft OP DET China Lake, 47677</b>             |          |           |                  |               |               |
| ACDU   | 0        | 1         | PR2              | 7356          |               |
| <b>ACTIVITY TOTAL:</b>                               | <b>0</b> | <b>1</b>  |                  |               |               |
| <b>COMAEWWINGPAC DET AIMD, 44328</b>                 |          |           |                  |               |               |
| ACDU   | 0        | 1         | PR1              | 7356          |               |
|  | 0        | 1         | PR2              | 7356          |               |
| <b>ACTIVITY TOTAL:</b>                               | <b>0</b> | <b>2</b>  |                  |               |               |
| <b>COMFAIRWESTPAC, 09356</b>                         |          |           |                  |               |               |
| SELRES   | 0        | 1         | PR1              | 7356          |               |
| <b>ACTIVITY TOTAL:</b>                               | <b>0</b> | <b>1</b>  |                  |               |               |
| <b>COMSEACONWINGPAC DET AIMD, 44326</b>              |          |           |                  |               |               |
| ACDU   | 0        | 4         | PR2              | 7356          |               |
| <b>ACTIVITY TOTAL:</b>                               | <b>0</b> | <b>4</b>  |                  |               |               |
| <b>COMVAQWINGPAC DET AIMD, 44329</b>                 |          |           |                  |               |               |
| ACDU   | 0        | 2         | PR1              | 7356          |               |
|  | 0        | 5         | PR2              | 7356          |               |
|  | 0        | 3         | PR3              | 7356          | 9526          |
| <b>ACTIVITY TOTAL:</b>                               | <b>0</b> | <b>10</b> |                  |               |               |
| <b>Naval Weapons Test Squadron China Lake, 39787</b> |          |           |                  |               |               |
| ACDU   | 0        | 1         | PR1              | 7356          |               |
|  | 0        | 3         | PR2              | 7356          |               |
| <b>ACTIVITY TOTAL:</b>                               | <b>0</b> | <b>4</b>  |                  |               |               |

II.A.1.b. BILLETTS REQUIRED FOR OPERATIONAL AND FLEET SUPPORT ACTIVITIES

| ACTIVITY, UIC, PHASING INCREMENT            | BILLETS  |           | DESIG/<br>RATING | PNEC/<br>PMOS | SNEC/<br>SMOS |
|---|----------|-----------|------------------|---------------|---------------|
|   | OFF      | ENL       |                  |               |               |
| <b>Navy FTR WPNS School Fallon, 52912</b>   |          |           |                  |               |               |
| USMC  | 0        | 1         | SGT              | 6048          |               |
| <b>ACTIVITY TOTAL:</b>                      | <b>0</b> | <b>1</b>  |                  |               |               |
| <b>Sea OP DET NAS Lemoore, 46964</b>        |          |           |                  |               |               |
| ACDU  | 0        | 4         | PR3              | 7356          |               |
| <b>ACTIVITY TOTAL:</b>                      | <b>0</b> | <b>4</b>  |                  |               |               |
| <b>Sea OP DET NAS North Island, 46968</b>   |          |           |                  |               |               |
| ACDU  | 0        | 4         | PR3              | 7356          |               |
| <b>ACTIVITY TOTAL:</b>                      | <b>0</b> | <b>4</b>  |                  |               |               |
| <b>Van OP DET NAS Whidbey Island, 31179</b> |          |           |                  |               |               |
| ACDU  | 0        | 5         | PR2              | 7356          |               |
| <b>ACTIVITY TOTAL:</b>                      | <b>0</b> | <b>5</b>  |                  |               |               |
| FLEET SUPPORT ACTIVITIES - USMC             |          |           |                  |               |               |
| <b>MALS-14 MCAS Cherry Point, 09114</b>     |          |           |                  |               |               |
| USMC  | 0        | 1         | GYSGT            | 6048          |               |
|   | 0        | 11        | LCPL             | 6048          |               |
|   | 0        | 2         | SGT              | 6048          |               |
|   | 0        | 2         | SSGT             | 6048          |               |
| <b>ACTIVITY TOTAL:</b>                      | <b>0</b> | <b>16</b> |                  |               |               |
| <b>MALS-26 MCAS New River, 09167</b>        |          |           |                  |               |               |
| USMC  | 0        | 3         | CPL              | 6048          |               |
|   | 0        | 1         | GYSGT            | 6048          |               |
|   | 0        | 5         | LCPL             | 6048          |               |
|   | 0        | 2         | SGT              | 6048          |               |
|   | 0        | 2         | SSGT             | 6048          |               |
| <b>ACTIVITY TOTAL:</b>                      | <b>0</b> | <b>13</b> |                  |               |               |
| <b>MALS-31 MCAS Beaufort, 09131</b>         |          |           |                  |               |               |
| USMC  | 0        | 1         | GYSGT            | 6048          |               |
|   | 0        | 11        | LCPL             | 6048          |               |
|   | 0        | 2         | SGT              | 6048          |               |
|   | 0        | 2         | SSGT             | 6048          |               |
| <b>ACTIVITY TOTAL:</b>                      | <b>0</b> | <b>16</b> |                  |               |               |

II.A.1.b. BILLETS REQUIRED FOR OPERATIONAL AND FLEET SUPPORT ACTIVITIES

| ACTIVITY, UIC, PHASING INCREMENT                   | BILLETS  |           | DESIG/<br>RATING | PNEC/<br>PMOS | SNEC/<br>SMOS |
|--|----------|-----------|------------------|---------------|---------------|
|  | OFF      | ENL       |                  |               |               |
| <b>MATSG-21 Pensacola, 67389</b>                   |          |           |                  |               |               |
| USMC   | 0        | 3         | GYSGT            | 6048          |               |
|  | 0        | 3         | SGT              | 6048          |               |
|  | 0        | 4         | SSGT             | 6048          |               |
| <b>ACTIVITY TOTAL:</b>                             | <b>0</b> | <b>10</b> |                  |               |               |
| <b>MALS-11 MCAS Miramar, 09111</b>                 |          |           |                  |               |               |
| USMC   | 0        | 1         | GYSGT            | 6048          |               |
|  | 0        | 11        | LCPL             | 6048          |               |
|  | 0        | 2         | SGT              | 6048          |               |
|  | 0        | 2         | SSGT             | 6048          |               |
| <b>ACTIVITY TOTAL:</b>                             | <b>0</b> | <b>16</b> |                  |               |               |
| <b>MALS-12 MCAS Iwakuni, 09112</b>                 |          |           |                  |               |               |
| USMC   | 0        | 1         | GYSGT            | 6048          |               |
|  | 0        | 11        | LCPL             | 6048          |               |
| USMC   | 0        | 2         | SGT              | 6048          |               |
|  | 0        | 2         | SSGT             | 6048          |               |
| <b>ACTIVITY TOTAL:</b>                             | <b>0</b> | <b>16</b> |                  |               |               |
| <b>MALS-13 MCAS Yuma, 57082</b>                    |          |           |                  |               |               |
| USMC   | 0        | 1         | GYSGT            | 6048          |               |
|  | 0        | 11        | LCPL             | 6048          |               |
|  | 0        | 2         | SGT              | 6048          |               |
|  | 0        | 2         | SSGT             | 6048          |               |
| <b>ACTIVITY TOTAL:</b>                             | <b>0</b> | <b>16</b> |                  |               |               |
| <b>MALS-16 MCAS Miramar, 55583, FY06 Increment</b> |          |           |                  |               |               |
| USMC   | 0        | 3         | CPL              | 6048          |               |
|  | 0        | 1         | GYSGT            | 6048          |               |
|  | 0        | 5         | LCPL             | 6048          |               |
|  | 0        | 2         | SGT              | 6048          |               |
|  | 0        | 2         | SSGT             | 6048          |               |
| <b>ACTIVITY TOTAL:</b>                             | <b>0</b> | <b>13</b> |                  |               |               |

**II.A.1.b. BILLETS REQUIRED FOR OPERATIONAL AND FLEET SUPPORT ACTIVITIES**

| ACTIVITY, UIC, PHASING INCREMENT     | BILLETS  |           | DESIG/<br>RATING | PNEC/<br>PMOS | SNEC/<br>SMOS |
|--------------------------------------|----------|-----------|------------------|---------------|---------------|
|                                      | OFF      | ENL       |                  |               |               |
| <b>MALS-36 MCAS Futenma, 09136</b>   |          |           |                  |               |               |
| USMC                                 | 0        | 3         | CPL              | 6048          |               |
|                                      | 0        | 1         | GYSGT            | 6048          |               |
|                                      | 0        | 5         | LCPL             | 6048          |               |
|                                      | 0        | 2         | SGT              | 6048          |               |
|                                      | 0        | 2         | SSGT             | 6048          |               |
| <b>ACTIVITY TOTAL:</b>               | <b>0</b> | <b>13</b> |                  |               |               |
| <b>MALS-41 JRB Fort Worth, 03007</b> |          |           |                  |               |               |
| USMC                                 | 0        | 1         | SGT              | 6048          |               |
| SMCR                                 | 0        | 1         | GYSGT            | 6048          |               |
|                                      | 0        | 11        | LCPL             | 6048          |               |
|                                      | 0        | 1         | SGT              | 6048          |               |
|                                      | 0        | 2         | SSGT             | 6048          |               |
| <b>ACTIVITY TOTAL:</b>               | <b>0</b> | <b>16</b> |                  |               |               |

II.A.1.c. TOTAL BILLETS REQUIRED FOR OPERATIONAL AND FLEET SUPPORT ACTIVITIES

| DESIG/<br>RATING                       | PNEC/SNEC<br>PMOS/SMOS | PFYs |     | CFY02 |     | FY03 |     | FY04 |     | FY05 |     | FY06 |     |
|--|------------------------|------|-----|-------|-----|------|-----|------|-----|------|-----|------|-----|
|  |                        | OFF  | ENL | OFF   | ENL | OFF  | ENL | OFF  | ENL | OFF  | ENL | OFF  | ENL |
| NAVY OPERATIONAL ACTIVITIES - SELRES   |                        |      |     |       |     |      |     |      |     |      |     |      |     |
| PR3                                    | 7356                   |      | 3   | 0     |     | 0    |     | 0    |     | 0    |     | 0    |     |
| NAVY OPERATIONAL ACTIVITIES - USMC     |                        |      |     |       |     |      |     |      |     |      |     |      |     |
| CPL                                    | 6048                   |      | 1   | 0     |     | 0    |     | 0    |     | 0    |     | 0    |     |
| LCPL                                   | 6048                   |      | 1   | 0     |     | 0    |     | 0    |     | 0    |     | 0    |     |
| USMC OPERATIONAL ACTIVITIES - USMC     |                        |      |     |       |     |      |     |      |     |      |     |      |     |
| CPL                                    | 6048                   |      | 17  | 0     |     | 0    |     | 0    |     | 0    |     | 0    |     |
| LCPL                                   | 6048                   |      | 45  | 0     |     | 0    |     | 2    |     | 4    |     | 4    |     |
| SGT                                    | 6048                   |      | 7   | 0     |     | 0    |     | 0    |     | 0    |     | 0    |     |
| USMC OPERATIONAL ACTIVITIES - SMCR     |                        |      |     |       |     |      |     |      |     |      |     |      |     |
| CPL                                    | 6048                   |      | 2   | 0     |     | 0    |     | 0    |     | 0    |     | 0    |     |
| NAVY FLEET SUPPORT ACTIVITIES - ACDU   |                        |      |     |       |     |      |     |      |     |      |     |      |     |
| PR1                                    | 7356                   |      | 35  | 0     |     | 1    |     | 1    |     | 0    |     | 0    |     |
| PR2                                    | 7356                   |      | 77  | 0     |     | 2    |     | 0    |     | 0    |     | 0    |     |
| PR3                                    | 7356                   |      | 30  | 0     |     | 0    |     | 0    |     | 0    |     | 0    |     |
| PR3                                    | 7356 9526              |      | 3   | 0     |     | 0    |     | 0    |     | 0    |     | 0    |     |
| NAVY FLEET SUPPORT ACTIVITIES - TAR    |                        |      |     |       |     |      |     |      |     |      |     |      |     |
| PR1                                    | 7356                   |      | 1   | 0     |     | 0    |     | 0    |     | 0    |     | 0    |     |
| PR2                                    | 7356                   |      | 2   | 0     |     | 0    |     | 0    |     | 0    |     | 0    |     |
| NAVY FLEET SUPPORT ACTIVITIES - SELRES |                        |      |     |       |     |      |     |      |     |      |     |      |     |
| PR1                                    | 7356                   |      | 1   | 0     |     | 0    |     | 0    |     | 0    |     | 0    |     |
| NAVY FLEET SUPPORT ACTIVITIES - USMC   |                        |      |     |       |     |      |     |      |     |      |     |      |     |
| SGT                                    | 6048                   |      | 1   | 0     |     | 0    |     | 0    |     | 0    |     | 0    |     |
| USMC FLEET SUPPORT ACTIVITIES - USMC   |                        |      |     |       |     |      |     |      |     |      |     |      |     |
| CPL                                    | 6048                   |      | 6   | 0     |     | 0    |     | 0    |     | 0    |     | 3    |     |
| GYSGT                                  | 6048                   |      | 10  | 0     |     | 0    |     | 0    |     | 0    |     | 1    |     |
| LCPL                                   | 6048                   |      | 65  | 0     |     | 0    |     | 0    |     | 0    |     | 5    |     |
| SGT                                    | 6048                   |      | 18  | 0     |     | 0    |     | 0    |     | 0    |     | 2    |     |
| SSGT                                   | 6048                   |      | 18  | 0     |     | 0    |     | 0    |     | 0    |     | 2    |     |
| USMC FLEET SUPPORT ACTIVITIES - SMCR   |                        |      |     |       |     |      |     |      |     |      |     |      |     |
| GYSGT                                  | 6048                   |      | 1   | 0     |     | 0    |     | 0    |     | 0    |     | 0    |     |
| LCPL                                   | 6048                   |      | 11  | 0     |     | 0    |     | 0    |     | 0    |     | 0    |     |
| SGT                                    | 6048                   |      | 1   | 0     |     | 0    |     | 0    |     | 0    |     | 0    |     |
| SSGT                                   | 6048                   |      | 2   | 0     |     | 0    |     | 0    |     | 0    |     | 0    |     |

II.A.1.c. TOTAL BILLETS REQUIRED FOR OPERATIONAL AND FLEET SUPPORT ACTIVITIES

| DESIG/<br>RATING                       | PNEC/SNEC<br>PMOS/SMOS | PFYs |     | CFY02 |     | FY03 |     | FY04 |     | FY05 |     | FY06 |     |
|--|------------------------|------|-----|-------|-----|------|-----|------|-----|------|-----|------|-----|
|  |                        | OFF  | ENL | OFF   | ENL | OFF  | ENL | OFF  | ENL | OFF  | ENL | OFF  | ENL |
| <b>SUMMARY TOTALS:</b>                 |                        |      |     |       |     |      |     |      |     |      |     |      |     |
| NAVY OPERATIONAL ACTIVITIES - SELRES   |                        |      |     |       |     |      |     |      |     |      |     |      |     |
|  |                        | 3    |     | 0     |     | 0    |     | 0    |     | 0    |     | 0    |     |
| NAVY OPERATIONAL ACTIVITIES - USMC     |                        |      |     |       |     |      |     |      |     |      |     |      |     |
|  |                        | 2    |     | 0     |     | 0    |     | 0    |     | 0    |     | 0    |     |
| USMC OPERATIONAL ACTIVITIES - USMC     |                        |      |     |       |     |      |     |      |     |      |     |      |     |
|  |                        | 69   |     | 0     |     | 0    |     | 2    |     | 4    |     | 4    |     |
| USMC OPERATIONAL ACTIVITIES - SMCR     |                        |      |     |       |     |      |     |      |     |      |     |      |     |
|  |                        | 2    |     | 0     |     | 0    |     | 0    |     | 0    |     | 0    |     |
| NAVY FLEET SUPPORT ACTIVITIES - ACDU   |                        |      |     |       |     |      |     |      |     |      |     |      |     |
|  |                        | 145  |     | 0     |     | 3    |     | 1    |     | 0    |     | 0    |     |
| NAVY FLEET SUPPORT ACTIVITIES - TAR    |                        |      |     |       |     |      |     |      |     |      |     |      |     |
|  |                        | 3    |     | 0     |     | 0    |     | 0    |     | 0    |     | 0    |     |
| NAVY FLEET SUPPORT ACTIVITIES - SELRES |                        |      |     |       |     |      |     |      |     |      |     |      |     |
|  |                        | 1    |     | 0     |     | 0    |     | 0    |     | 0    |     | 0    |     |
| NAVY FLEET SUPPORT ACTIVITIES - USMC   |                        |      |     |       |     |      |     |      |     |      |     |      |     |
|  |                        | 1    |     | 0     |     | 0    |     | 0    |     | 0    |     | 0    |     |
| USMC FLEET SUPPORT ACTIVITIES - USMC   |                        |      |     |       |     |      |     |      |     |      |     |      |     |
|  |                        | 117  |     | 0     |     | 0    |     | 0    |     | 0    |     | 13   |     |
| USMC FLEET SUPPORT ACTIVITIES - SMCR   |                        |      |     |       |     |      |     |      |     |      |     |      |     |
|  |                        | 15   |     | 0     |     | 0    |     | 0    |     | 0    |     | 0    |     |

II.A.1.c. TOTAL BILLETS REQUIRED FOR OPERATIONAL AND FLEET SUPPORT ACTIVITIES

| DESIG/<br>RATING     | PNEC/SNEC<br>PMOS/SMOS | PFYs |     | CFY02 |     | FY03 |     | FY04 |     | FY05 |     | FY06 |     |
|----------------------|------------------------|------|-----|-------|-----|------|-----|------|-----|------|-----|------|-----|
|                      |                        | OFF  | ENL | OFF   | ENL | OFF  | ENL | OFF  | ENL | OFF  | ENL | OFF  | ENL |
| <b>GRAND TOTALS:</b> |                        |      |     |       |     |      |     |      |     |      |     |      |     |
| NAVY - ACDU          |                        |      | 145 |       | 0   |      | 3   |      | 1   |      | 0   |      | 0   |
| NAVY - TAR           |                        |      | 3   |       | 0   |      | 0   |      | 0   |      | 0   |      | 0   |
| NAVY - SELRES        |                        |      | 4   |       | 0   |      | 0   |      | 0   |      | 0   |      | 0   |
| NAVY - USMC          |                        |      | 3   |       | 0   |      | 0   |      | 0   |      | 0   |      | 0   |
| USMC - USMC          |                        |      | 186 |       | 0   |      | 0   |      | 2   |      | 4   |      | 17  |
| USMC - SMCR          |                        |      | 17  |       | 0   |      | 0   |      | 0   |      | 0   |      | 0   |

**II.A.2.a. OPERATIONAL AND FLEET SUPPORT ACTIVITY DEACTIVATION SCHEDULE**

**SOURCE:** Total Force Manpower Management System  
 MCCDC Total Manpower Requirements Extract for MOS 6048  
 Aircraft Program Data File – Model Detail for MV-22B

**DATE:**10/26/2001  
 10/30/2001  
 10/24/2001

| <b>ACTIVITY, UIC</b>                                    | <b>PFYs</b> | <b>CFY02</b> | <b>FY03</b> | <b>FY04</b> | <b>FY05</b> | <b>FY06</b> |
|---|-------------|--------------|-------------|-------------|-------------|-------------|
| FLEET SUPPORT ACTIVITIES - NAVY                         |             |              |             |             |             |             |
| AIMD USS Constellation (CV 64)                    03364 | 0           | 1            | 0           | 0           | 0           | 0           |
| <b>TOTAL:</b>   | 0           | 1            | 0           | 0           | 0           | 0           |

**II.A.2.c. TOTAL BILLETS TO BE DELETED IN OPERATIONAL AND FLEET SUPPORT ACTIVITIES**

| DESIG/<br>RATING                     | PNEC/SNEC<br>PMOS/SMOS | PFYs |     | CFY02 |     | FY03 |     | FY04 |     | FY05 |     | FY06 |     |
|--------------------------------------|------------------------|------|-----|-------|-----|------|-----|------|-----|------|-----|------|-----|
|                                      |                        | OFF  | ENL | OFF   | ENL | OFF  | ENL | OFF  | ENL | OFF  | ENL | OFF  | ENL |
| NAVY FLEET SUPPORT ACTIVITIES - ACDU |                        |      |     |       |     |      |     |      |     |      |     |      |     |
| PR1                                  | 7356                   |      | 1   |       | -1  |      | 0   |      | 0   |      | 0   |      | 0   |
| PR2                                  | 7356                   |      | 4   |       | -2  |      | 0   |      | 0   |      | -1  |      | 0   |
| <b>SUMMARY TOTALS:</b>               |                        |      |     |       |     |      |     |      |     |      |     |      |     |
| NAVY FLEET SUPPORT ACTIVITIES - ACDU |                        |      |     |       |     |      |     |      |     |      |     |      |     |
|                                      |                        |      | 5   |       | -3  |      | 0   |      | 0   |      | -1  |      | 0   |
| <b>GRAND TOTALS:</b>                 |                        |      |     |       |     |      |     |      |     |      |     |      |     |
| NAVY - ACDU                          |                        |      |     |       |     |      |     |      |     |      |     |      |     |
|                                      |                        |      | 5   |       | -3  |      | 0   |      | 0   |      | -1  |      | 0   |

**II.A.4. CHARGEABLE STUDENT BILLET REQUIREMENTS**

| ACTIVITY,<br>LOCATION, UIC                     | USN/<br>USMC | PFYs |     | CFY02 |      | FY03 |      | FY04 |      | FY05 |      | FY06 |      |
|--|--------------|------|-----|-------|------|------|------|------|------|------|------|------|------|
|  |              | OFF  | ENL | OFF   | ENL  | OFF  | ENL  | OFF  | ENL  | OFF  | ENL  | OFF  | ENL  |
| NATTC Pensacola, NAS Pensacola, Florida, 63093 |              |      |     |       |      |      |      |      |      |      |      |      |      |
|  | NAVY         |      | 0.0 |       | 7.4  |      | 7.3  |      | 7.4  |      | 7.3  |      | 7.3  |
|  | USMC         |      | 0.0 |       | 6.4  |      | 6.5  |      | 6.8  |      | 7.1  |      | 7.1  |
| <b>SUMMARY TOTALS:</b>                         |              |      |     |       |      |      |      |      |      |      |      |      |      |
|  | NAVY         |      | 0.0 |       | 7.4  |      | 7.3  |      | 7.4  |      | 7.3  |      | 7.3  |
|  | USMC         |      | 0.0 |       | 6.4  |      | 6.5  |      | 6.8  |      | 7.1  |      | 7.1  |
| <b>GRAND TOTALS:</b>                           |              |      |     |       |      |      |      |      |      |      |      |      |      |
|  |              |      | 0.0 |       | 13.8 |      | 13.8 |      | 14.2 |      | 14.4 |      | 14.4 |

**II.A.5. ANNUAL INCREMENTAL AND CUMULATIVE BILLETS**

| DESIG/<br>RATING | PNEC/<br>PMOS | SNEC/<br>SMOS | BILLET<br>BASE | CFY02<br>+/- CUM | FY03<br>+/- CUM | FY04<br>+/- CUM | FY05<br>+/- CUM | FY06<br>+/- CUM |
|------------------|---------------|---------------|----------------|------------------|-----------------|-----------------|-----------------|-----------------|
|------------------|---------------|---------------|----------------|------------------|-----------------|-----------------|-----------------|-----------------|

**a. OFFICER - USN** Not Applicable

**b. ENLISTED - USN**

Fleet Support Billets ACDU and TAR

|     |      |      |    |    |    |   |    |   |    |    |    |   |    |
|-----|------|------|----|----|----|---|----|---|----|----|----|---|----|
| PR1 | 7356 |      | 36 | -1 | 35 | 1 | 36 | 1 | 37 | 0  | 37 | 0 | 37 |
| PR2 | 7356 |      | 79 | -2 | 77 | 2 | 79 | 0 | 79 | -1 | 78 | 0 | 78 |
| PR3 | 7356 |      | 30 | 0  | 30 | 0 | 30 | 0 | 30 | 0  | 30 | 0 | 30 |
| PR3 | 7356 | 9526 | 3  | 0  | 3  | 0 | 3  | 0 | 3  | 0  | 3  | 0 | 3  |

Chargeable Student Billets ACDU and TAR

|  |  |  |   |   |   |    |   |   |   |    |   |   |   |
|--|--|--|---|---|---|----|---|---|---|----|---|---|---|
|  |  |  | 0 | 8 | 8 | -1 | 7 | 1 | 8 | -1 | 7 | 0 | 7 |
|--|--|--|---|---|---|----|---|---|---|----|---|---|---|

SELRES Billets

|     |      |  |   |   |   |   |   |   |   |   |   |   |   |
|-----|------|--|---|---|---|---|---|---|---|---|---|---|---|
| PR1 | 7356 |  | 1 | 0 | 1 | 0 | 1 | 0 | 1 | 0 | 1 | 0 | 1 |
| PR3 | 7356 |  | 3 | 0 | 3 | 0 | 3 | 0 | 3 | 0 | 3 | 0 | 3 |

**TOTAL USN ENLISTED BILLETS:**

|               |  |  |     |    |     |   |     |   |     |    |     |   |     |
|---------------|--|--|-----|----|-----|---|-----|---|-----|----|-----|---|-----|
| Fleet Support |  |  | 148 | -3 | 145 | 3 | 148 | 1 | 149 | -1 | 148 | 0 | 148 |
|---------------|--|--|-----|----|-----|---|-----|---|-----|----|-----|---|-----|

|                    |  |  |   |   |   |    |   |   |   |    |   |   |   |
|--------------------|--|--|---|---|---|----|---|---|---|----|---|---|---|
| Chargeable Student |  |  | 0 | 8 | 8 | -1 | 7 | 1 | 8 | -1 | 7 | 0 | 7 |
|--------------------|--|--|---|---|---|----|---|---|---|----|---|---|---|

|        |  |  |   |   |   |   |   |   |   |   |   |   |   |
|--------|--|--|---|---|---|---|---|---|---|---|---|---|---|
| SELRES |  |  | 4 | 0 | 4 | 0 | 4 | 0 | 4 | 0 | 4 | 0 | 4 |
|--------|--|--|---|---|---|---|---|---|---|---|---|---|---|

**c. OFFICER - USMC** Not Applicable

**d. ENLISTED - USMC**

Operational Billets USMC and AR

|      |      |  |    |   |    |   |    |   |    |   |    |   |    |
|------|------|--|----|---|----|---|----|---|----|---|----|---|----|
| CPL  | 6048 |  | 18 | 0 | 18 | 0 | 18 | 0 | 18 | 0 | 18 | 0 | 18 |
| LCPL | 6048 |  | 46 | 0 | 46 | 0 | 46 | 2 | 48 | 4 | 52 | 4 | 56 |
| SGT  | 6048 |  | 7  | 0 | 7  | 0 | 7  | 0 | 7  | 0 | 7  | 0 | 7  |

Fleet Support Billets USMC and AR

|       |      |  |    |   |    |   |    |   |    |   |    |   |    |
|-------|------|--|----|---|----|---|----|---|----|---|----|---|----|
| CPL   | 6048 |  | 6  | 0 | 6  | 0 | 6  | 0 | 6  | 0 | 6  | 3 | 9  |
| GYSGT | 6048 |  | 10 | 0 | 10 | 0 | 10 | 0 | 10 | 0 | 10 | 1 | 11 |
| LCPL  | 6048 |  | 65 | 0 | 65 | 0 | 65 | 0 | 65 | 0 | 65 | 5 | 70 |
| SGT   | 6048 |  | 19 | 0 | 19 | 0 | 19 | 0 | 19 | 0 | 19 | 2 | 21 |

**II.A.5. ANNUAL INCREMENTAL AND CUMULATIVE BILLETS**

| DESIG/<br>RATING                       | PNEC/<br>PMOS | SNEC/<br>SMOS | BILLET<br>BASE | CFY02 |     | FY03 |     | FY04 |     | FY05 |     | FY06 |     |
|--|---------------|---------------|----------------|-------|-----|------|-----|------|-----|------|-----|------|-----|
|  |               |               |                | +/-   | CUM | +/-  | CUM | +/-  | CUM | +/-  | CUM | +/-  | CUM |
| SSGT                                   | 6048          |               | 18             | 0     | 18  | 0    | 18  | 0    | 18  | 0    | 18  | 2    | 20  |
| Chargeable Student Billets USMC and AR |               |               | 0              | 7     | 7   | 0    | 7   | 0    | 7   | 0    | 7   | 0    | 7   |
| SMCR Billets                           |               |               |                |       |     |      |     |      |     |      |     |      |     |
| CPL                                    | 6048          |               | 2              | 0     | 2   | 0    | 2   | 0    | 2   | 0    | 2   | 0    | 2   |
| GYSGT                                  | 6048          |               | 1              | 0     | 1   | 0    | 1   | 0    | 1   | 0    | 1   | 0    | 1   |
| LCPL                                   | 6048          |               | 11             | 0     | 11  | 0    | 11  | 0    | 11  | 0    | 11  | 0    | 11  |
| SGT                                    | 6048          |               | 1              | 0     | 1   | 0    | 1   | 0    | 1   | 0    | 1   | 0    | 1   |
| SSGT                                   | 6048          |               | 2              | 0     | 2   | 0    | 2   | 0    | 2   | 0    | 2   | 0    | 2   |

**TOTAL USMC ENLISTED BILLETS:**

|                    |  |  |     |   |     |   |     |   |     |   |     |    |     |
|--------------------|--|--|-----|---|-----|---|-----|---|-----|---|-----|----|-----|
| Operational        |  |  | 71  | 0 | 71  | 0 | 71  | 2 | 73  | 4 | 77  | 4  | 81  |
| Fleet Support      |  |  | 118 | 0 | 118 | 0 | 118 | 0 | 118 | 0 | 118 | 13 | 131 |
| Chargeable Student |  |  | 0   | 7 | 7   | 0 | 7   | 0 | 7   | 0 | 7   | 0  | 7   |
| SMCR               |  |  | 17  | 0 | 17  | 0 | 17  | 0 | 17  | 0 | 17  | 0  | 17  |

**II.B. PERSONNEL REQUIREMENTS**

**II.B.1. ANNUAL TRAINING INPUT REQUIREMENTS**

**CIN, COURSE TITLE:** C-602-2040 Path 2, Aircrew Survival Equipment Intermediate Maintenance Pipeline

**COURSE LENGTH:** 8.0 Weeks

**NAVY TOUR LENGTH:** 36 Months

**ATTRITION FACTOR:** Navy: 10% USMC: 0%

**BACKOUT FACTOR:** 0.16

| TRAINING<br>ACTIVITY | SOURCE | ACDU/TAR<br>SELRES | CFY02 |     | FY03 |     | FY04 |     | FY05 |     | FY06 |     |
|----------------------|--------|--------------------|-------|-----|------|-----|------|-----|------|-----|------|-----|
|                      |        |                    | OFF   | ENL | OFF  | ENL | OFF  | ENL | OFF  | ENL | OFF  | ENL |
| NATTC Pensacola      |        |                    |       |     |      |     |      |     |      |     |      |     |
|                      | NAVY   | ACDU               |       | 52  |      | 51  |      | 52  |      | 51  |      | 51  |
|                      |        | TAR                |       | 1   |      | 1   |      | 1   |      | 1   |      | 1   |
|                      |        | SELRES             |       | 0   |      | 1   |      | 0   |      | 1   |      | 0   |
|                      | USMC   | USMC               |       | 43  |      | 44  |      | 46  |      | 48  |      | 48  |
|                      |        | SMCR               |       | 2   |      | 2   |      | 2   |      | 2   |      | 2   |
|                      |        | TOTAL:             |       | 98  |      | 99  |      | 101 |      | 103 |      | 102 |

## PART III - TRAINING REQUIREMENTS

The following elements are not affected by the NAOS and, therefore, are not included in Part III of this NTSP:

III.A.1. Initial Training Requirements

III.A.2. Follow-on Training

III.A.2.b. Planned Courses

III.A.2.c. Unique Courses

III.A.3. Existing Training Phased Out

**PART III - TRAINING REQUIREMENTS**

**III.A.2. FOLLOW-ON TRAINING**

**III.A.2.a. EXISTING COURSES**

**CIN, COURSE TITLE:** C-602-2040 Path 2, Aircrew Survival Equipment Intermediate Maintenance Pipeline  
**TRAINING ACTIVITY:** NATTC  
**LOCATION, UIC:** NAS Pensacola, Florida, 63093

**SOURCE:** NAVY                      **STUDENT CATEGORY:** ACDU - TAR

| CFY02 |     | FY03 |     | FY04 |     | FY05 |     | FY06 |     |            |
|-------|-----|------|-----|------|-----|------|-----|------|-----|------------|
| OFF   | ENL | OFF  | ENL | OFF  | ENL | OFF  | ENL | OFF  | ENL |            |
|       | 53  |      | 52  |      | 53  |      | 52  |      | 52  | ATIR       |
|       | 48  |      | 47  |      | 48  |      | 47  |      | 47  | Output     |
|       | 7.4 |      | 7.3 |      | 7.4 |      | 7.3 |      | 7.3 | AOB        |
|       | 7.4 |      | 7.3 |      | 7.4 |      | 7.3 |      | 7.3 | Chargeable |

**SOURCE:** NAVY                      **STUDENT CATEGORY:** SELRES

| CFY02 |     | FY03 |     | FY04 |     | FY05 |     | FY06 |     |            |
|-------|-----|------|-----|------|-----|------|-----|------|-----|------------|
| OFF   | ENL | OFF  | ENL | OFF  | ENL | OFF  | ENL | OFF  | ENL |            |
|       | 0   |      | 1   |      | 0   |      | 1   |      | 0   | ATIR       |
|       | 0   |      | 1   |      | 0   |      | 1   |      | 0   | Output     |
|       | 0.0 |      | 0.1 |      | 0.0 |      | 0.1 |      | 0.0 | AOB        |
|       | 0.0 |      | 0.0 |      | 0.0 |      | 0.0 |      | 0.0 | Chargeable |

**SOURCE:** USMC                      **STUDENT CATEGORY:** USMC - AR

| CFY02 |     | FY03 |     | FY04 |     | FY05 |     | FY06 |     |            |
|-------|-----|------|-----|------|-----|------|-----|------|-----|------------|
| OFF   | ENL | OFF  | ENL | OFF  | ENL | OFF  | ENL | OFF  | ENL |            |
|       | 43  |      | 44  |      | 46  |      | 48  |      | 48  | ATIR       |
|       | 43  |      | 44  |      | 46  |      | 48  |      | 48  | Output     |
|       | 6.4 |      | 6.5 |      | 6.8 |      | 7.1 |      | 7.1 | AOB        |
|       | 6.4 |      | 6.5 |      | 6.8 |      | 7.1 |      | 7.1 | Chargeable |

**SOURCE:** USMC                      **STUDENT CATEGORY:** SMCR

| CFY02 |     | FY03 |     | FY04 |     | FY05 |     | FY06 |     |            |
|-------|-----|------|-----|------|-----|------|-----|------|-----|------------|
| OFF   | ENL | OFF  | ENL | OFF  | ENL | OFF  | ENL | OFF  | ENL |            |
|       | 2   |      | 2   |      | 2   |      | 2   |      | 2   | ATIR       |
|       | 2   |      | 2   |      | 2   |      | 2   |      | 2   | Output     |
|       | 0.3 |      | 0.3 |      | 0.3 |      | 0.3 |      | 0.3 | AOB        |
|       | 0.0 |      | 0.0 |      | 0.0 |      | 0.0 |      | 0.0 | Chargeable |

## **PART IV - TRAINING LOGISTICS SUPPORT REQUIREMENTS**

The following elements are not affected by the NAOS and, therefore, are not included in Part IV of this NTSP:

IV.A. Training Hardware

IV.A.2. Training Devices

IV.B.1. Training Services

IV.C. Facility Requirements

IV.C.1. Facility Requirements Summary (Space/Support) by Activity

IV.C.2. Facility Requirements Detailed by Activity and Course

IV.C.3. Facility Project Summary by Program

**PART IV - TRAINING LOGISTICS SUPPORT REQUIREMENTS**

**IV.A. TRAINING HARDWARE**

**IV.A.1. TTE / GPTE / SPTE / ST / GPETE / SPETE**

**CIN, COURSE TITLE:** C-670-2018, Aviator's Breathing Oxygen (ABO) Test Site Operator/Analyst (Track C-602-2040)

**TRAINING ACTIVITY:** NATTC

**LOCATION, UIC:** NAS Pensacola, Florida, 63093

| <b>ITEM NO.</b> | <b>EQUIPMENT / TYPE OR RANGE OF REPAIR PARTS</b>  | <b>QTY REQD</b> | <b>DATE REQD</b> | <b>GFE CFE</b> | <b>STATUS</b> |
|-----------------|---|-----------------|------------------|----------------|---------------|
| <b>TTE</b>      |   |                 |                  |                |               |
| 013             | Liquid Oxygen Servicing Trailer, 3655-00-158-0657 | 1               | Dec 96           | GFE            | Onboard       |
| 014             | Nicolet Oxygen Analyzer                           | 3               | Dec 96           | GFE            | Onboard       |
| <b>GPTE</b>     |   |                 |                  |                |               |
| 022             | Pressure Gage, 0-200 PSI                          | 2               | Dec 96           | GFE            | Onboard       |

**CIN, COURSE TITLE:** C-602-2028, LOX Converter Test Stand/LOX Converter and SKU Repair/OBOGS Component Repair (Track C-602-2040)

**TRAINING ACTIVITY:** NATTC

**LOCATION, UIC:** NAS Pensacola, Florida, 63093

| <b>ITEM NO.</b> | <b>EQUIPMENT / TYPE OR RANGE OF REPAIR PARTS</b> | <b>QTY REQD</b> | <b>DATE REQD</b> | <b>GFE CFE</b> | <b>STATUS</b> |
|-----------------|--|-----------------|------------------|----------------|---------------|
| <b>TTE</b>      |  |                 |                  |                |               |
| 002             | Liquid Oxygen Converter Test Stand, 59A-12D      | 10              | Dec 96           | GFE            | Onboard       |
| 003             | Liquid Oxygen Converter, CGU-24/A                | 15              | Dec 96           | GFE            | Onboard       |
| 004             | Seat Survival Kit, SKU-2                         | 15              | Dec 96           | GFE            | Onboard       |
| 060             | Converter, LIQ OXY, C/W 219073-C1A               | 2               | Dec 96           | GFE            | Onboard       |
| 061             | Converter, LIQ OXY, C/W 1DC-0016-1D              | 2               | Dec 96           | GFE            | Onboard       |
| 062             | Converter, C/W 29044-1A1A                        | 1               | Dec 96           | GFE            | Onboard       |
| 063             | Valve Assembly Comb, 43900-3                     | 29              | Dec 96           | GFE            | Onboard       |
| 065             | Converter, LIQ OXY, 10C-0016-10                  | 27              | Dec 96           | GFE            | Onboard       |
| 066             | Reducer Assembly, 216D800-1                      | 12              | Dec 96           | GFE            | Onboard       |
| 067             | Lid Assembly, 221S200-101                        | 10              | Dec 96           | GFE            | Onboard       |
| 068             | Hose Assembly, 33D1341-5                         | 3               | Dec 96           | GFE            | Onboard       |

**IV.A.1. TTE / GPTE / SPTE / ST / GPETE / SPETE**

|             |   |    |        |     |         |
|-------------|---|----|--------|-----|---------|
| 069         | Flowmeter, Cal Kit (IT-69), 59A120D9        | 10 | Dec 96 | GFE | Onboard |
| 070         | Pressure Gauge, Cal Kit (IT-69), 59A120-D4  | 10 | Dec 96 | GFE | Onboard |
| 071         | Regulator, OXY, 283028-0001                 | 3  | Dec 96 | GFE | Onboard |
| 072         | Tool Kit, Press Reducer (IT-70), T216D900-1 | 10 | Dec 96 | GFE | Onboard |
| 073         | Test Stand, Oxygen (IT-71), 1455AS100-1     | 10 | Dec 96 | GFE | Onboard |
| 074         | Purging Device Kit, 50C-0001-1              | 4  | Dec 96 | GFE | Onboard |
| 094         | Oxygen Monitor, 3270023-0401                | 3  | Dec 00 | GFE | Pending |
| 098         | Oxygen Concentrator, 3261009-0105           | 1  | Dec 00 | GFE | Pending |
| 099         | Oxygen Regulator, 3260014-0401              | 8  | Dec 00 | GFE | Pending |
| 102         | Valve Regulating, 8-540                     | 1  | Dec 00 | GFE | Pending |
| 104         | Oxygen Concentrator, 3261077-0101           | 1  | Dec 00 | GFE | Pending |
| 107         | Valve Regulator, 85-15560-15-580            | 1  | Dec 00 | GFE | Pending |
| 108         | Regulator Nitrogen, 8-250                   | 1  | Dec 00 | GFE | Pending |
| 110         | Oxygen Cylinder, RR-C-901/1                 | 2  | Dec 00 | GFE | Pending |
| 111         | Nitrogen Cylinder, RR-C-901/1               | 2  | Dec 00 | GFE | Pending |
| <b>GPTE</b> |   |    |        |     |         |
| 015         | Gage, Pressure, 0-3000 PSI                  | 1  | Dec 96 | GFE | Onboard |
| 016         | Gage, Pressure, 0-160 PSI                   | 12 | Dec 96 | GFE | Onboard |
| 017         | Gage, Low Pressure, 0-15 PSI                | 2  | Dec 96 | GFE | Onboard |
| 018         | Oxygen Gage, 200 PSI                        | 2  | Dec 96 | GFE | Onboard |
| 019         | Gage, 813095-1                              | 5  | Dec 96 | GFE | Onboard |
| 020         | Gage assembly, KB-390-400                   | 1  | Dec 96 | GFE | Onboard |
| 021         | Pressure Gage, 0-3000 PSI                   | 1  | Dec 96 | GFE | Onboard |
| 023         | Pressure Gage, 0-160 PSI                    | 5  | Dec 96 | GFE | Onboard |
| <b>SPTE</b> |   |    |        |     |         |
| 024         | Gage, MD-1                                  | 15 | Dec 96 | GFE | Onboard |

#### IV.A.1. TTE / GPTE / SPTE / ST / GPETE / SPETE

|     |  |    |        |     |         |
|-----|--|----|--------|-----|---------|
| 025 | Gage, MD-2                             | 10 | Dec 96 | GFE | Onboard |
| 026 | Flower Assembly                        | 15 | Dec 96 | GFE | Onboard |
| 027 | Manometer, D-293                       | 1  | Dec 96 | GFE | Onboard |
| 028 | Thickness Gage, 1318426-7              | 12 | Dec 96 | GFE | Onboard |
| 029 | Gage, Precision, 0-10"                 | 2  | Dec 96 | GFE | Onboard |
| 030 | Regulator, R-1                         | 11 | Dec 96 | GFE | Onboard |
| 031 | Gage, Differential, F-122-2-W          | 2  | Dec 96 | GFE | Onboard |
| 032 | Simulator, 62-A-116-D55                | 5  | Dec 96 | GFE | Onboard |
| 033 | Piezometer, 62-A-116-C48               | 5  | Dec 96 | GFE | Onboard |
| 034 | Manometer, JM80BA12A73A                | 1  | Dec 96 | GFE | Onboard |
| 035 | Manometer, JM20A12A7A                  | 1  | Dec 96 | GFE | Onboard |
| 036 | Flowmeter, 1370-3T                     | 2  | Dec 96 | GFE | Onboard |
| 037 | Altitude Controller, 00-63-6993        | 9  | Dec 96 | GFE | Onboard |
| 038 | Altitude Indicator, 10,000-40,000 ft.  | 1  | Dec 96 | GFE | Onboard |
| 039 | Altitude Indicator, 30,000-150,000 ft. | 1  | Dec 96 | GFE | Onboard |
| 040 | Manometer, 12-26                       | 2  | Dec 96 | GFE | Onboard |
| 041 | Needle Valve                           | 3  | Dec 96 | GFE | Onboard |
| 042 | Vacuum Pump                            | 1  | Dec 96 | GFE | Onboard |
| 043 | Guide, Spring, 0.546                   | 15 | Dec 96 | GFE | Onboard |
| 044 | Guide, Spring, 0.562                   | 15 | Dec 96 | GFE | Onboard |
| 045 | Guide, Spring, 0.578                   | 15 | Dec 96 | GFE | Onboard |
| 046 | Guide, Spring, 0.593                   | 15 | Dec 96 | GFE | Onboard |
| 047 | Guide, Spring, 0.662                   | 15 | Dec 96 | GFE | Onboard |
| 048 | Guide, Spring, 0.682                   | 15 | Dec 96 | GFE | Onboard |
| 049 | Guide Assembly, 14840                  | 20 | Dec 96 | GFE | Onboard |

**IV.A.1. TTE / GPTE / SPTE / ST / GPETE / SPETE**

|              |  |    |        |     |         |
|--------------|--|----|--------|-----|---------|
| 050          | Spacer, 14B65                                | 20 | Dec 96 | GFE | Onboard |
| 051          | Brush Bore, 7790452                          | 4  | Dec 96 | GFE | Onboard |
| 052          | Torque Wrench, TE6FUA                        | 1  | Dec 96 | GFE | Onboard |
| 053          | Pressure Guard, 0-175 PSI                    | 10 | Dec 96 | GFE | Onboard |
| 054          | Regulator, Pressure, 0-80 PSI                | 2  | Dec 96 | GFE | Onboard |
| 055          | Balance Wheel, 240452                        | 10 | Dec 96 | GFE | Onboard |
| 056          | Tap Kit, Special, STP-1                      | 1  | Dec 96 | GFE | Onboard |
| 088          | Test Set, Concentrator, 1779AS500-1          | 2  | Dec 00 | GFE | Pending |
| 089          | Heat Gun, EP-5                               | 1  | Dec 00 | GFE | Pending |
| 090          | Wrench Aneroid, 3301111-1                    | 2  | Dec 00 | GFE | Pending |
| 091          | Gauge lever Height, 3301113-1                | 2  | Dec 00 | GFE | Pending |
| 092          | Punch Hollow Ring, 330114-1                  | 1  | Dec 00 | GFE | Pending |
| 093          | Pliers Retaining, 3301098-6001               | 2  | Dec 00 | GFE | Pending |
| 096          | Test Set Concentrator, 3300158-6101          | 1  | Dec 00 | GFE | Pending |
| 097          | Test Set, Regulator/Monitor, 3300157-6101    | 2  | Dec 00 | GFE | Pending |
| 103          | Test Set, TTU-520, 1582AS500-2               | 1  | Dec 00 | GFE | Pending |
| 105          | Barometer, 1130600-1                         | 1  | Dec 00 | GFE | Pending |
| 106          | Screwdriver Aneroid, 3301112-1               | 1  | Dec 00 | GFE | Pending |
| 109          | Tool Box, 297                                | 2  | Dec 00 | GFE | Pending |
| <b>GPETE</b> |  |    |        |     |         |
| 057          | Multi-meter, Simpson 260                     | 4  | Dec 96 | GFE | Onboard |
| 095          | Power Supply, 28VDC, 3190-4025               | 2  | Dec 00 | GFE | Pending |
| 101          | Fluke Meter, 77/BN                           | 1  | Dec 00 | GFE | Pending |
| <b>SPETE</b> |  |    |        |     |         |
| 087          | Test Set, Environmental Control, 1582AS300-2 | 1  | Dec 00 | GFE | Pending |

**IV.A.1. TTE / GPTE / SPTE / ST / GPETE / SPETE**

**CIN, COURSE TITLE:** C-602-2027, Oxygen Systems Components Test Stand/Oxygen Regulator Repair (Track C-602-2040)

**TRAINING ACTIVITY:** NATTC

**LOCATION, UIC:** NAS Pensacola, Florida, 63093

| <b>ITEM NO.</b> | <b>EQUIPMENT / TYPE OR RANGE OF REPAIR PARTS</b> | <b>QTY REQD</b> | <b>DATE REQD</b> | <b>GFE CFE</b> | <b>STATUS</b> |
|-----------------|--|-----------------|------------------|----------------|---------------|
| <b>TTE</b>      |  |                 |                  |                |               |
| 001             | Panel Mounted Bendix, Oxygen Regulator           | 15              | Dec 96           | GFE            | Onboard       |
| 075             | Cleaning Tank Ultra, HT1212                      | 2               | Dec 96           | GFE            | Onboard       |
| 076             | Generator, Ultrasonic, N1000-XHS01-120-600       | 1               | Dec 96           | GFE            | Onboard       |
| 077             | Regulator, MD1, 14950-26                         | 1               | Dec 96           | GFE            | Onboard       |
| 078             | Regulator, MD1, 29255-100B9                      | 1               | Dec 96           | GFE            | Onboard       |
| 079             | Regulator, MD1, 2894-10AB2                       | 4               | Dec 96           | GFE            | Onboard       |
| 080             | Cleaner, Ultrasonic, SEC1825                     | 1               | Dec 96           | GFE            | Onboard       |
| 081             | Test Stand, Oxygen, 1172AS100                    | 9               | Dec 96           | GFE            | Onboard       |
| 082             | Regulator, Oxygen MD-1, 14950-12                 | 33              | Dec 96           | GFE            | Onboard       |
| 083             | Regulator, Oxygen MD-2, 14800-8B                 | 33              | Dec 96           | GFE            | Onboard       |
| 084             | Regulator, Oxygen, CRU-79, 900-002-025-05        | 33              | Dec 96           | GFE            | Onboard       |
| 085             | Test Stand, Oxygen, 1316AS100                    | 1               | Dec 96           | GFE            | Onboard       |
| 086             | Truck Hand, Two Wheel, KKK-T-728                 | 2               | Dec 96           | GFE            | Onboard       |
| <b>GPTE</b>     |  |                 |                  |                |               |
| 015             | Gage, Pressure, 0-3000 PSI                       | 1               | Dec 96           | GFE            | Onboard       |
| 016             | Gage, Pressure, 0-160 PSI                        | 12              | Dec 96           | GFE            | Onboard       |
| 017             | Gage, Low Pressure, 0-15 PSI                     | 2               | Dec 96           | GFE            | Onboard       |
| 018             | Oxygen Gage, 200 PSI                             | 2               | Dec 96           | GFE            | Onboard       |
| 019             | Gage, 813095-1                                   | 5               | Dec 96           | GFE            | Onboard       |
| 020             | Gage assembly, KB-390-400                        | 1               | Dec 96           | GFE            | Onboard       |
| 021             | Pressure Gage, 0-3000 PSI                        | 1               | Dec 96           | GFE            | Onboard       |
| 022             | Pressure Gage, 0-200 PSI                         | 2               | Dec 96           | GFE            | Onboard       |

#### IV.A.1. TTE / GPTE / SPTE / ST / GPETE / SPETE

|             |  |    |        |     |         |
|-------------|--|----|--------|-----|---------|
| 023         | Pressure Gage, 0-160 PSI               | 5  | Dec 96 | GFE | Onboard |
| <b>SPTE</b> |  |    |        |     |         |
| 024         | Gage, MD-1                             | 15 | Dec 96 | GFE | Onboard |
| 025         | Gage, MD-2                             | 10 | Dec 96 | GFE | Onboard |
| 026         | Flower Assembly                        | 15 | Dec 96 | GFE | Onboard |
| 027         | Manometer, D-293                       | 1  | Dec 96 | GFE | Onboard |
| 028         | Thickness Gage, 1318426-7              | 12 | Dec 96 | GFE | Onboard |
| 029         | Gage, Precision, 0-10"                 | 2  | Dec 96 | GFE | Onboard |
| 030         | Regulator, R-1                         | 11 | Dec 96 | GFE | Onboard |
| 031         | Gage, Differential, F-122-2-W          | 2  | Dec 96 | GFE | Onboard |
| 032         | Simulator, 62-A-116-D55                | 1  | Dec 96 | GFE | Onboard |
| 033         | Piezometer, 62-A-116-C48               | 5  | Dec 96 | GFE | Onboard |
| 034         | Manometer, JM80BA12A73A                | 1  | Dec 96 | GFE | Onboard |
| 035         | Manometer, JM20A12A7A                  | 1  | Dec 96 | GFE | Onboard |
| 036         | Flowmeter, 1370-3T                     | 2  | Dec 96 | GFE | Onboard |
| 037         | Altitude Controller, 00-63-6993        | 9  | Dec 96 | GFE | Onboard |
| 038         | Altitude Indicator, 10,000-40,000 ft.  | 1  | Dec 96 | GFE | Onboard |
| 039         | Altitude Indicator, 30,000-150,000 ft. | 1  | Dec 96 | GFE | Onboard |
| 040         | Manometer, 12-26                       | 2  | Dec 96 | GFE | Onboard |
| 041         | Needle Valve                           | 3  | Dec 96 | GFE | Onboard |
| 042         | Vacuum Pump                            | 1  | Dec 96 | GFE | Onboard |
| 043         | Guide Spring, 0.546                    | 15 | Dec 96 | GFE | Onboard |
| 044         | Guide Spring, 0.562                    | 15 | Dec 96 | GFE | Onboard |
| 045         | Guide Spring, 0.578                    | 15 | Dec 96 | GFE | Onboard |
| 046         | Guide Spring, 0.593                    | 15 | Dec 96 | GFE | Onboard |
| 047         | Guide Spring, 0.662                    | 15 | Dec 96 | GFE | Onboard |

**IV.A.1. TTE / GPTE / SPTE / ST / GPETE / SPETE**

|              |                               |    |        |     |         |
|--------------|-------------------------------|----|--------|-----|---------|
| 048          | Guide Spring, 0.682           | 15 | Dec 96 | GFE | Onboard |
| 049          | Guide Assembly, 14840         | 20 | Dec 96 | GFE | Onboard |
| 050          | Spacer, 14B65                 | 20 | Dec 96 | GFE | Onboard |
| 051          | Brush Bore, 7790452           | 4  | Dec 96 | GFE | Onboard |
| 052          | Torque Wrench, TE6FUA         | 1  | Dec 96 | GFE | Onboard |
| 053          | Pressure Guard, 0-175 PSI     | 10 | Dec 96 | GFE | Onboard |
| 054          | Regulator, Pressure, 0-80 PSI | 2  | Dec 96 | GFE | Onboard |
| 055          | Balance Wheel, 240452         | 10 | Dec 96 | GFE | Onboard |
| 056          | Tap Kit, Special, STP-1       | 1  | Dec 96 | GFE | Onboard |
| <b>GPETE</b> |                               |    |        |     |         |
| 057          | Multi-meter, Simpson 260      | 4  | Dec 96 | GFE | Onboard |

**IV.B.2. CURRICULA MATERIALS AND TRAINING AIDS**

**CIN, COURSE TITLE:** C-670-2018, Aviator's Breathing Oxygen (ABO) Test Site Operator/Analyst (Track C-602-2040)

**TRAINING ACTIVITY:** NATTC

**LOCATION, UIC:** NAS Pensacola, Florida, 63093

| <b>TYPES OF MATERIAL OR AID</b> | <b>QTY<br/>REQD</b> | <b>DATE<br/>REQD</b> | <b>STATUS</b> |
|---------------------------------|---------------------|----------------------|---------------|
| Curriculum Outline              | 2                   | Dec 96               | Onboard       |
| Instructor Guide                | 2                   | Dec 96               | Onboard       |
| Student Guide                   | 10                  | Dec 96               | Onboard       |

**CIN, COURSE TITLE:** C-602-2028, LOX Converter Test Stand/LOX Converter and SKU Repair/OBOGS Component Repair (Track C-602-2040)

**TRAINING ACTIVITY:** NATTC

**LOCATION, UIC:** NAS Pensacola, Florida, 63093

| <b>TYPES OF MATERIAL OR AID</b> | <b>QTY<br/>REQD</b> | <b>DATE<br/>REQD</b> | <b>STATUS</b> |
|---------------------------------|---------------------|----------------------|---------------|
| Curriculum Outline              | 2                   | Dec 96               | Onboard       |
| Instructor Guide                | 2                   | Dec 96               | Onboard       |
| Overhead Transparency Sets      | 2                   | Dec 96               | Onboard       |
| Student Guide                   | 10                  | Dec 96               | Onboard       |

**CIN, COURSE TITLE:** C-602-2027, Oxygen Systems Components Test Stand/Oxygen Regulator Repair (Track C-602-2040)

**TRAINING ACTIVITY:** NATTC

**LOCATION, UIC:** NAS Pensacola, Florida, 63093

| <b>TYPES OF MATERIAL OR AID</b> | <b>QTY<br/>REQD</b> | <b>DATE<br/>REQD</b> | <b>STATUS</b> |
|---------------------------------|---------------------|----------------------|---------------|
| Curriculum Outline              | 2                   | Dec 96               | Onboard       |
| Instructor Guide                | 2                   | Dec 96               | Onboard       |
| Overhead Transparency Sets      | 2                   | Dec 96               | Onboard       |
| Student Guide                   | 10                  | Dec 96               | Onboard       |

**IV.B.3. TECHNICAL MANUALS**

**CIN, COURSE TITLE:** C-670-2018, Aviator's Breathing Oxygen (ABO) Test Site Operator/Analyst (Track C-602-2040)  
**TRAINING ACTIVITY:** NATTC  
**LOCATION, UIC:** NAS Pensacola, Florida, 63093

| TECHNICAL MANUAL NUMBER / TITLE  | MEDIUM    | QTY REQD | DATE REQD | STATUS  |
|--|-----------|----------|-----------|---------|
| NAVAIR 06-30-501<br>Oxygen/Nitrogen Cryogenic Systems  | Hard copy | 11       | Dec 96    | Onboard |
| NAVAIR 17-15-98<br>Installation Operation and Maintenance Instructions, ABO Contaminant Analyzer                   | Hard copy | 11       | Dec 96    | Onboard |
| NAVAIR AG-332AO-GYD-000<br>Aviator's Breathing Oxygen (ABO) Surveillance Program Laboratory Manual and Field Guide | Hard copy | 11       | Dec 96    | Onboard |

**CIN, COURSE TITLE:** C-602-2028, LOX Converter Test Stand/LOX Converter and SKU Repair/OBOGS Component Repair (Track C-602-2040)  
**TRAINING ACTIVITY:** NATTC  
**LOCATION, UIC:** NAS Pensacola, Florida, 63093

| TECHNICAL MANUAL NUMBER / TITLE   | MEDIUM     | QTY REQD | DATE REQD | STATUS  |
|---|------------|----------|-----------|---------|
| NAVAIR 00-25-100<br>Naval Air Systems Command Technical Manual Program  | Hard copy  | 2        | Dec 96    | Onboard |
| NAVAIR 00-25-DRT-1<br>Automatic Distribution Requirements List  | Hard copy  | 1        | Dec 96    | Onboard |
| NAVAIR 00-35QH-2<br>NAVAIR Initial Outfitting List - Flight Operational Material and Airborne Operational Equipment Replenishment Items/Spare Parts   | Hard copy  | 1        | Dec 96    | Onboard |
| NAVAIR 00-35QH-2-4<br>NAVAIR Initial Outfitting List - Flight Operational Material and Airborne Operational Equipment Replenishment Items/Spare Parts | Hard copy  | 1        | Dec 96    | Onboard |
| NAVAIR 00-500A<br>Equipment Applicability List  | Microfiche | 3        | Dec 96    | Onboard |
| NAVAIR 00-500AV<br>Avionics Changes Cross Reference   | Microfiche | 3        | Dec 96    | Onboard |
| NAVAIR 00-500B<br>Aircraft Application List   | Microfiche | 3        | Dec 96    | Onboard |
| NAVAIR 00-500C<br>Directives Application List   | Microfiche | 3        | Dec 96    | Onboard |

### IV.B.3. TECHNICAL MANUALS

|  |            |    |        |         |
|--|------------|----|--------|---------|
| NAVAIR 00-500M<br>Microfilm Cartridge, Cross Reference   | Microfiche | 3  | Dec 96 | Onboard |
| NAVAIR 00-500SE<br>Support Equipment, Cross Reference  | Microfiche | 3  | Dec 96 | Onboard |
| NAVAIR 13-1-6.3<br>Aviation - Crew Systems Seat Survival Kits  | Hard copy  | 2  | Dec 96 | Onboard |
| NAVAIR 13-1-6.4<br>Aviation - Crew Systems Oxygen Equipment  | Hard copy  | 2  | Dec 96 | Onboard |
| NAVAIR 13-1-6.8<br>Aviation - Crew Systems Equipment Work Unit Code Manual   | Hard copy  | 2  | Dec 96 | Onboard |
| NAVAIR 16-1-8<br>Aeronautical Support Equipment Index  | Hard copy  | 2  | Dec 96 | Onboard |
| NAVAIR 16-1-8.1<br>Aeronautical Support Equipment Work Unit Code Manual  | Hard copy  | 2  | Dec 96 | Onboard |
| NAVAIR 17-15BC-11<br>Handbook of Maintenance Instructions with Illustrated Parts Breakdown - Oxygen System Components Test Stand | Hard copy  | 2  | Dec 96 | Onboard |
| NAVAIR 17-15BC-20<br>Handbook of Maintenance Instructions with Illustrated Parts Breakdown - Liquid Oxygen Converter Test Stand  | Hard copy  | 2  | Dec 96 | Onboard |
| NAVAIR 17-600-39-6-1<br>Pre-operational Checklist Oxygen System Components Test Stand Model 62A116E1                             | Hard copy  | 13 | Dec 96 | Onboard |
| NAVAIR 17-600-39-6-2<br>Periodic Maintenance Requirements Manual OTS 62A116E1  | Hard copy  | 13 | Dec 96 | Onboard |
| NAVAIR AG-332AO-GYD-000<br>Aviator's Breathing Oxygen (ABO) Surveillance Program Laboratory Manual and Field Guide               | Hard copy  | 13 | Dec 96 | Onboard |
| NAVAIRINST 13650.1<br>NAVAIRSYSCOM Aircraft Maintenance Material Readiness List  | Hard copy  | 1  | Dec 96 | Onboard |
| NAVAIRINST 5215.8 (Series)<br>NAVAIR Technical Directive System  | Hard copy  | 1  | Dec 96 | Onboard |
| NAVEDTRA 10077<br>Blueprint Reading and Sketching  | Hard copy  | 1  | Dec 96 | Onboard |

**IV.B.3. TECHNICAL MANUALS**

|   |            |   |        |         |
|---|------------|---|--------|---------|
| NAVSUP 2002<br>Navy Stock List of Publications and Forms                | Microfiche | 1 | Dec 96 | Onboard |
| NAVSUP 2320<br>Source, Maintenance, and Recoverability Code Changes     | Microfiche | 1 | Dec 96 | Onboard |
| NAVSUP 4000<br>Introduction to Supply Catalogs and Related Publications | Hard copy  | 3 | Dec 96 | Onboard |
| NAVSUP P-485<br>Afloat Supply Procedures                                | Hard copy  | 1 | Dec 96 | Onboard |
| OPNAVINST 3750.6 (Series)<br>Naval Aircraft Mishap Reporting Procedures | Hard copy  | 1 | Dec 96 | Onboard |
| OPNAVINST 4790.2 (Series)<br>Naval Aviation Maintenance Program         | Hard copy  | 1 | Dec 96 | Onboard |

**CIN, COURSE TITLE:** C-602-2027, Oxygen Systems Components Test Stand/Oxygen Regulator Repair (Track C-602-2040)  
**TRAINING ACTIVITY:** NATTC  
**LOCATION, UIC:** NAS Pensacola, Florida, 63093

| <b>TECHNICAL MANUAL NUMBER / TITLE</b>  | <b>MEDIUM</b> | <b>QTY REQD</b> | <b>DATE REQD</b> | <b>STATUS</b> |
|---|---------------|-----------------|------------------|---------------|
| NAVAIR 00-25-100<br>Naval Air Systems Command Technical Manual Program  | Hard copy     | 2               | Dec 96           | Onboard       |
| NAVAIR 00-25-DRT-1<br>Automatic Distribution Requirements List  | Hard copy     | 1               | Dec 96           | Onboard       |
| NAVAIR 00-35QH-2<br>NAVAIR Initial Outfitting List - Flight Operational Material and Airborne Operational Equipment Replenishment Items/Spare Parts   | Hard copy     | 1               | Dec 96           | Onboard       |
| NAVAIR 00-35QH-2-4<br>NAVAIR Initial Outfitting List - Flight Operational Material and Airborne Operational Equipment Replenishment Items/Spare Parts | Hard copy     | 1               | Dec 96           | Onboard       |
| NAVAIR 00-500A<br>Equipment Applicability List  | Microfiche    | 3               | Dec 96           | Onboard       |
| NAVAIR 00-500AV<br>Avionics Changes Cross Reference   | Microfiche    | 3               | Dec 96           | Onboard       |
| NAVAIR 00-500B<br>Aircraft Application List   | Microfiche    | 3               | Dec 96           | Onboard       |

### IV.B.3. TECHNICAL MANUALS

|  |            |    |        |         |
|--|------------|----|--------|---------|
| NAVAIR 00-500C<br>Directives Application List  | Microfiche | 3  | Dec 96 | Onboard |
| NAVAIR 00-500M<br>Microfilm Cartridge, Cross Reference   | Microfiche | 3  | Dec 96 | Onboard |
| NAVAIR 00-500SE<br>Support Equipment, Cross Reference  | Microfiche | 3  | Dec 96 | Onboard |
| NAVAIR 13-1-6.3<br>Aviation - Crew Systems Seat Survival Kits  | Hard copy  | 2  | Dec 96 | Onboard |
| NAVAIR 13-1-6.4<br>Aviation - Crew Systems Oxygen Equipment  | Hard copy  | 2  | Dec 96 | Onboard |
| NAVAIR 13-1-6.8<br>Aviation - Crew Systems Equipment Work Unit Code Manual   | Hard copy  | 2  | Dec 96 | Onboard |
| NAVAIR 16-1-8<br>Aeronautical Support Equipment Index  | Hard copy  | 2  | Dec 96 | Onboard |
| NAVAIR 16-1-8.1<br>Aeronautical Support Equipment Work Unit Code Manual  | Hard copy  | 2  | Dec 96 | Onboard |
| NAVAIR 17-15BC-11<br>Handbook of Maintenance Instructions with Illustrated Parts Breakdown - Oxygen System Components Test Stand | Hard copy  | 2  | Dec 96 | Onboard |
| NAVAIR 17-15BC-20<br>Handbook of Maintenance Instructions with Illustrated Parts Breakdown - Liquid Oxygen Converter Test Stand  | Hard copy  | 2  | Dec 96 | Onboard |
| NAVAIR 17-600-39-6-1<br>Pre-operational Checklist Oxygen System Components Test Stand Model 62A116E1                             | Hard copy  | 13 | Dec 96 | Onboard |
| NAVAIR 17-600-39-6-2<br>Periodic Maintenance Requirements Manual OTS 62A116E1  | Hard copy  | 13 | Dec 96 | Onboard |
| NAVAIR AG-332AO-GYD-000<br>Aviator's Breathing Oxygen (ABO) Surveillance Program Laboratory Manual and Field Guide               | Hard copy  | 13 | Dec 96 | Onboard |
| NAVAIRINST 13650.1<br>NAVAIRSYSCOM Aircraft Maintenance Material Readiness List  | Hard copy  | 1  | Dec 96 | Onboard |
| NAVAIRINST 5215.8 (Series)<br>NAVAIR Technical Directive System  | Hard copy  | 1  | Dec 96 | Onboard |

### IV.B.3. TECHNICAL MANUALS

|   |            |   |        |         |
|---|------------|---|--------|---------|
| NAVEDTRA 10077<br>Blueprint Reading and Sketching                       | Hard copy  | 1 | Dec 96 | Onboard |
| NAVSUP 2002<br>Navy Stock List of Publications and Forms                | Microfiche | 1 | Dec 96 | Onboard |
| NAVSUP 2320<br>Source, Maintenance, and Recoverability Code Changes     | Microfiche | 1 | Dec 96 | Onboard |
| NAVSUP 4000<br>Introduction to Supply Catalogs and Related Publications | Hard copy  | 3 | Dec 96 | Onboard |
| NAVSUP P-485<br>Afloat Supply Procedures                                | Hard copy  | 1 | Dec 96 | Onboard |
| OPNAVINST 3750.6 (Series)<br>Naval Aircraft Mishap Reporting Procedures | Hard copy  | 1 | Dec 96 | Onboard |
| OPNAVINST 4790.2 (Series)<br>Naval Aviation Maintenance Program         | Hard copy  | 1 | Dec 96 | Onboard |

**PART V - MPT MILESTONES**

| <b>COG CODE</b> | <b>MPT MILESTONES</b>  | <b>DATE</b> | <b>STATUS</b> |
|-----------------|--|-------------|---------------|
| OPTEVFOR        | Conducted OBOGS OPEVAL   | Oct 83      | Completed     |
| DA              | Conducted analysis of MPT Requirements for OBOGS   | Dec 84      | Completed     |
| TSA             | Conducted OBOGS Initial Training   | Dec 84      | Completed     |
| TSA             | Began Follow-on OBOGS Training at NAMTRAGRU DETs   | Jan 85      | Completed     |
| DA              | Achieved IOC for the OBOGS   | Sep 85      | Completed     |
| DA              | Achieved OBOGS MSD   | FY 86       | Completed     |
| DA              | Achieved OBOGS NSD   | FY 87       | Completed     |
| DA              | Approved Maintenance Plan for the ABO Contaminant Analyzer   | Jun 93      | Completed     |
| TSA             | Completed Initial Training for the ABO Contaminant Analyzer  | Jul 93      | Completed     |
| DA              | Delivered Curricula Materials for the ABO Contaminant Analyzer   | Aug 93      | Completed     |
| TSA             | Approved NTP for the ABO Contaminant Analyzer  | Jan 94      | Completed     |
| DA              | Achieved ABO Contaminant Analyzer MSD  | Sep 95      | Completed     |
| DA              | Achieved ABO Contaminant Analyzer NSD  | Sep 96      | Completed     |
| TSA             | Updated NTSP for the ABO Contaminant Analyzer  | Feb 99      | Completed     |
| TSA             | Discontinued OBOGS Training at the NAMTRAGRU DETs  | Dec 99      | Completed     |
| TSA             | Deliver OBOGS TTE to NATTC Pensacola   | Dec 00      | Pending       |
| TSA             | Begin OBOGS Follow-on Training at NATTC Pensacola  | Jun 01      | Pending       |
| TSA             | Updated NTSP to Include All LOX, OBOGS, and ABO Analyzer Training Requirements. Changed Title to NAOS and Resubmitted Draft NTSP for Comment | Dec 01      | Completed     |
| TSA             | Develop and Submit Proposed NTSP to OPNAV for approval   | Apr 02      | Pending       |
| TSA             | Distribute Approved NTSP   | May 02      | Pending       |

**PART VI - DECISION ITEMS / ACTION REQUIRED**

The following are actions generated at Maintenance Training Requirements Reviews and are currently in-work.

| <b>DECISION ITEM OR ACTION REQUIRED</b>  | <b>COMMAND ACTION</b> | <b>DUE DATE</b> | <b>STATUS</b> |
|--|-----------------------|-----------------|---------------|
| <b>PR.97MTRR.2040.001:</b><br>1. Add no more than Five days CRU-103 to curriculum. Reduce, but do not eliminate CRU-79 training.<br>2. Incorporate NACES Packing Press maintainer procedures into PR "C" School. Add no more than ten days to "C" School track | CNET                  | FY97            | In-work       |
| <b>PR.97MTRR.2040.002:</b> Add OBOGS into curriculum with no increase in course length.  | CNET                  | FY97            | In-work       |
| <b>PRC.OOMTRR.2040.01B:</b> Provide HABD assets to the PR "C" School   | CNAL                  | FY00            | In-work       |
| <b>PRC.00MTRR.2040.01A:</b> Provide HABD assets to the PR "C" School   | CNAP                  | FY00            | In-work       |
| <b>PRC.00MTRR.2040.01C:</b> Provide HABD assets to the PR "C" School   | CNARF                 | FY00            | In-work       |
| <b>PRC.00MTRR..2040.02:</b> Delete CRU-88 Regulator from course. Reduce course by three days.  | CNET                  | FY00            | In-work       |
| <b>PRC.00MTRR.2040.01:</b> Add HABD (SRU-40A/P, and SRU-40B/P to course. Do not exceed three days.   | CNET                  | FY00            | In-work       |

PART VII - POINTS OF CONTACT

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