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Maintenance

**PORTABLE THERAPEUTIC LIQUID OXYGEN
(PT LOX) UNITS**

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This instruction implements AFD 21-1, *Managing Aerospace Equipment Maintenance*. It assigns responsibilities for the servicing, maintenance, and storage of PT LOX units. It applies to all activities in the 374th Airlift Wing (374 AW) and 630th Air Mobility Support Squadron (630 AMSS) involved with PT LOX units.

SUMMARY OF REVISIONS

Changes applicable organizations throughout the text. A bar (|) indicates revisions from the previous edition.

1. Reference Publications:

- 1.1. PACAFI 21-101, *PACAF Aircraft Maintenance Organization and Procedures*.
- 1.2. TO 00-20-7, *Inspection System Documentation and Reporting for Support and Training Equipment*.
- 1.3. TO 00-25-172, *Ground Servicing of Aircraft and Static Grounding/Bonding*.
- 1.4. TO 1-1-1, *Cleaning of Aerospace Equipment*.
- 1.5. TO 1-1-2, *Corrosion Prevention and Control of Aerospace Equipment*.
- 1.6. TO 15X-1-1, *Oxygen Equipment*.
- 1.7. TO 15X-1-3, *Painting, Oxygen Equipment*.
- 1.8. TO 15X-2-6-9-3, *Overhaul, Liquid Oxygen Converter, Type CRU-24A/A*.
- 1.9. TO 15X-2-6-9-4, *IPB, Liquid Oxygen Converter, Type CRU-24A/A*.
- 1.10. TO 15X-2-8-1, *Liquid Oxygen Converter Type CRU-87/U (PT LOX)*.

1.11. TO 15X-2-8-2-2, *Maintenance Instructions--Intermediate LOX Converter*.

1.12. TO 42B6-1-1, *Quality Control of Oxygen Propellant Liquid, Aviators Liquid and Gaseous Breathing Oxygen*.

2. General Information:

2.1. PT LOX units provide humidified oxygen to patients when an aircraft oxygen source is not available. They are used on any opportune aircraft designated for aeromedical evacuation and the Mobile Aeromedical Staging Facility (MASF).

2.2. PT LOX units are assigned to the 374th Aeromedical Evacuation Squadron (374 AES). Communications and cooperation among 374 AES and the supporting agencies are of utmost importance in order to successfully launch certain aeromedical evacuation aircraft.

2.3. PT LOX units will be stored at the LOX Plant, Cryogenics Storage Element, Fuels Management Flight, 374th Supply Squadron (374 SUPS/LGSF).

2.3.1. A minimum of two PT LOX units will be serviced with LOX and kept fully mission capable at all times. All other units can be charged with nitrogen for extended storage.

2.4. PT LOX maintenance will be performed by LOX-qualified personnel per TO 15X-1-1. These personnel will be certified in AF Form 623, **On-the-Job Training Record**, or equivalent.

2.5. The Electro/Environmental (ELEN) Element, 374th Maintenance Squadron (374 MXS/LGMCE) is primarily responsible for inspection, purge, and storage preparation of PT LOX units at Yokota Air Base (AB). If the appropriate test equipment is not available or repair cannot be accomplished at Yokota AB, 374 AES is responsible for coordinating the applicable maintenance actions with another maintenance activity.

2.5.1. 374 MXS will permanently assign a lox cart at the LOX Plant to provide servicing of PT LOX units. 374 MXS/LGMCE will be responsible for maintenance and serviceability of this unit.

2.6. All inspection and maintenance action documentation will be accomplished using AFTO Form 244, **Industrial/Support Equipment Record**, per TO 00-20-7. Use of the Core Automated Maintenance System (CAMS) is optional for tracking inspections only.

3. Responsibilities Assigned:

3.1. The 374th Supply Squadron Bulk Storage LOX Plant is primarily responsible for servicing LOX to PT LOX units in mission-ready storage.

3.1.1. A minimum of two PL LOX units will be filled every Monday, Wednesday and Friday to maintain mission ready status. Mission ready status is defined as at least 8 liters of LOX per unit.

3.2. 374 AES In-Flight Medical Equipment Element (374 AES/SGNL). The PT LOX unit equipment custodian will coordinate all maintenance and servicing of the units. The custodian or designee will:

3.2.1. Provide a technician to cover fire guard position during refilling process upon request by LOX Plant personnel.

3.2.2. Obtain PT LOX units from storage for routine missions. If the units require servicing, notify the 374th Supply Squadron Bulk Storage LOX Plant (225-8811).

3.2.3. After duty hours, notify the 374 AW Maintenance Operations Center (MOC) (374 AW/OCM) and the 374th Supply Squadron Fuels Control Center at (225-8059/9187) as soon as possible that a PT LOX unit is needed for an alert mission.

3.2.3.1. Contact the Fuels Control Center for access to the LOX Plant and servicing of additional units if needed.

3.2.4. Use the AFTO Form 244 for tracking inspections and maintenance status of PT LOX units.

3.2.4.1. Performs weekly checks of PT LOX units as follows:

3.2.4.1.1. Inspect the quantity indicator power supply level and replace batteries as required by TO 15X-2-8-1.

3.2.4.1.2. Inspect the converter to ensure the unit does not go below 1 liter of LOX. Report any units that are at or below 1 liter to the 374th Supply Squadron Bulk Storage LOX Plant for servicing.

3.2.5. Performs monthly accessories inventory and inspections of PT LOX units using applicable technical data.

3.2.6. 374 AES will provide funds for temporary duty (TDY) when the inspection or repair of PT LOX units is beyond the capability at Yokota AB.

3.3. 374 MXS ELEN Element (374 MXS/LGMCE). This element will ensure inspections and preventive maintenance are accomplished per TO 15X-2-8-1 and PACAFI 21-101. They will:

3.3.1. Ensure the 60-day purge is accomplished per applicable technical data.

3.3.2. Prepare the units for storage per applicable technical data. Keep all inspections on stored units current.

3.4. 374 AW MOC (374 AW/OCM). This center will:

3.4.1. Contact LOX Plant personnel on call when notified by 374 AES that an alert mission is preparing to launch.

3.4.2. Coordinate access to PT LOX units in the cryogenics storage area with the Fuels Control Center during nonduty hours.

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