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Maintenance

**SERVICING, MAINTENANCE AND USE
OF LIQUID/GASEOUS OXYGEN CARTS**

COMPLIANCE WITH THIS PUBLICATION IS MANDATORY

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This instruction implements AFPD 21-1, *Maintenance of Military Materiel*. This instruction is applicable to the 19th Airlift Wing, and all aircraft maintenance activities within the 19th Maintenance Group and 314th Maintenance Group. Commanders, maintenance officers, and supervisors are responsible for ensuring compliance. This instruction does not apply to the Little Rock Air Force Base Air National Guard or Reserve units. This instruction is consistent with AFI 21-101_AMCSUP, *Aircraft and Equipment Maintenance Management*, AFMAN 91-203, *Air Force Occupational Safety, Fire, and Health Standards*, T.O. 1C-130H-2-12JG-10-2, *Job Guide – Technical Maintenance Manuals – Ground Handling Airplane Servicing*, T.O. 1C-130J-2-12JG-10-2, *Job Guide-Airplane Servicing (Excluding Fuel System)*, T.O. 42B6-1-1, *Technical Manual – Quality Control Aviators Breathing Oxygen and Aviators Gaseous Breathing Oxygen*, T.O. 15X-1-1, *Maintenance Instruction – Oxygen Equipment*, and T.O. 00-20-1, *Aerospace Equipment Maintenance Inspection, Documentation, Policies, and Procedures*. This instruction establishes procedures for servicing, maintenance, use, and documentation of liquid oxygen (LOX) and gaseous oxygen (GOX) carts. It is established to ensure aircraft safety of flight and mission accomplishment. Ensure that all records created as a result of processes prescribed in this publication are maintained in accordance with (IAW) AFI 33-322, *Records Management and Information Governance Program*, and disposed of IAW the Air Force Records Information Management System (AFRIMS) located at <https://www.my.af.mil/gcss-af61a/afirms/afirms/>. Refer recommended changes and questions about this publication to the Office of Primary Responsibility (OPR) using the AF Form 847, *Recommendation for Change of Publication*; route AF Form 847s from the field through the appropriate functional managers chain of command.

SUMMARY OF CHANGES

This publication has had minor administrative changes.

1. General.

1.1. This instruction was developed to align responsibilities and ensure compliance with applicable directives for adequate quality control of breathing oxygen for aviators and to ensure safety of flight. Although LOX is not flammable, it does support combustion and has an expansion ratio of 860:1. This instruction will provide units with increased flexibility and improved control of equipment assets for daily use and during deployments.

2. Areas of Responsibility. This section establishes responsibilities of each unit. By defining areas of responsibility, positive control of equipment will be achieved and will permit greater control of assets for daily use and mobility requirements.

2.1. Aircraft Maintenance Units (AMU) will:

2.1.1. Be allocated 1 LOX carts per 4-5 aircraft per AMU. The number of LOX carts may vary depending upon equipment availability.

2.1.2. Establish a control log within each maintenance unit debrief section for documenting the use of LOX during aircraft servicing for accountability purposes. Headings for the log will contain as a minimum: cart number, aircraft tail number, and date serviced. Control log will be maintained for a minimum of 1 month.

2.1.3. Maintain the historical data file for the AFTO Form 134 on all in-service LOX/GOX servicing trailers IAW 42B6-1-1.

2.1.4. Be responsible for all LOX/GOX carts AFTO Form 134 documentation. If LOX usage is not documented on the AFTO Form 134, the using AMU supervision will be notified and the cart will not be serviced until the proper documentation has been completed. If all LOX that is missing cannot be accounted for on the AFTO Form 134, then the cart will be turned over to the Electrical Environmental back shop to ensure the cart is serviceable.

2.1.5. Perform a serviceability inspection prior to use IAW applicable technical data for the LOX cart being used. Document any discrepancies on AFTO Form 244 IAW T.O. 00-20-1. LOX carts should not be used below 10 gallons to prevent cart from becoming empty causing 2 days of downtime for draining, purging, and re-servicing.

2.1.6. Be responsible for taking the cart to the servicing line at Cryo Plant (POL) if the quantity of LOX in the tank drops below 10 gallons after servicing an aircraft. When transporting a LOX cart with an approved GOV, follow towing procedures found in applicable equipment T.O.s.

2.1.7. Coordinate use of another unit's LOX/GOX cart between production superintendents.

2.1.8. Coordinate emergency servicing through MOC. AMUs will provide a fire guard (second person) for all emergency servicing outside of normal times list or as mission dictates with the coordination with the MOC. Command Post maintains the Fuel Service Center's standby personnel listing.

2.2. 19 MXS/Electrical Environmental Section will:

2.2.1. Retain LOX/GOX carts not required for aircraft servicing in ready-reserve status. Ready-reserve carts will be maintained in serviceable and purged status. Ready-reserve carts will be rotated into service as mission dictates.

2.2.2. At the unit's discretion, secure LOX/GOX carts by means of chains or locking devices to prevent unauthorized use. If locking devices are used, units will establish control procedures for the accountability/control of locking devices, locks, and keys.

2.2.3. Prepare LOX carts and complete shipping documents as required for unit deployments and Maintenance Repair Teams (MRT). Users will perform transfer and acceptance inspections as required.

2.2.4. Conduct daily inspections to determine LOX cart status/serviceability. Document and maintain all AFTO Form 244s for accountability purposes.

2.2.5. Inspect LOX/GOX carts IAW applicable tech data to determine serviceability in the event that a "missing product" condition is identified. Document inspection on AFTO Form 244 IAW 00-20-1. A "missing product" condition is defined as an undocumented loss of oxygen product greater than the allowable leakage or evaporative limits.

2.2.6. Coordinate with 19 MXS Production Section for any support requested during off duty hours.

2.3. TA Section will:

2.3.1. Coordinate with 19 MXS Production Section for any support requested during off duty hours.

2.3.2. Establish a control log for documenting the use of LOX during aircraft servicing for accountability purposes. Headings for the log should contain as a minimum: cart number, aircraft tail number, and date serviced. Control log will be maintained for a minimum of 1 month.

2.3.3. Coordinate with MOC on the availability of a LOX cart. TA will then sign-out available LOX cart and be responsible for all AFTO Form 134 and AFTO Form 244 cart form documentation. TA will deliver LOX cart to aircraft for servicing and return LOX cart to the LOX plant.

2.3.4. Perform a serviceability inspection prior to use IAW applicable technical data for the LOX cart being used. Document any discrepancies on AFTO Form 244 IAW T.O. 00-20-1. LOX carts should not be used below 10 gallons to prevent cart from becoming empty.

2.4. 19 LRS/Fuels Management Element will:

2.4.1. Refill serviceable LOX carts positioned at the LOX facility servicing line, 0900 hours Monday thru Friday. Weekend servicing will be on an emergency basis only and must be coordinated with the Command Post at 987-1900. In order to conserve LOX, POL must have a minimum of 2 carts with 20 gallons or less remaining before carts will be serviced. The respective unit will coordinate emergency servicing through MOC. Units will provide a fire guard (second person) for all emergency servicing outside of normal times list or as mission dictates with the coordination with the MOC.

2.4.2. Properly document the equipment forms and notify MOC of any discrepancies noted prior to or during servicing. Identify any AFTO Form 134 discrepancies to the Electrical Environmental back shop through 19 MXS production supervisor and aircraft servicing AMU through 19 AMXS Supervision.

JOHN M. SCHUTTE, Colonel, USAF
Commander

Attachment 1**GLOSSARY OF REFERENCES AND SUPPORTING INFORMATION*****References***

AFI 21-101_AMCSUP, *Aircraft and Equipment Maintenance Management*, 3 August 2020

AFMAN 91-203, *Air Force Occupational Safety, Fire, and Health Standards*, 10 December 2018

T.O. 1C-130H-2-12JG-10-2, *Job Guide – Technical Maintenance MNL – Ground Handling Airplane Servicing*, 15 May 2019

T.O. 1C-130J-2-12JG-10-2, *Job Guide-Airplane Servicing (Excluding Fuel System)*, 1 July 2019

T.O. 42B6-1-1, *Quality Control of Aviator's Breathing Oxygen*, 6 March 2012

T.O. 00-20-1, *Aerospace Equipment Maintenance Inspection, Documentation, Policies, and Procedures*, 6 September 2019

T.O. 15X-1-1, *Maintenance Instruction – Oxygen Equipment*, 1 January 2020

Adopted Forms

AF Form 134, Aviator Breathing Oxygen Servicing Trailer Log (Liquid/Gaseous)

AFTO 244, Industrial/Support Equipment Record

Abbreviations and Acronyms

AFI—Air Force Instruction

AFTO—Air Force Technical Order

AMU—Aircraft Maintenance Unit

AMXS—Aircraft Maintenance Squadron

GOX—Gaseous Oxygen

IAW—In Accordance With

LOX—Liquid Oxygen

LRS—Logistics Readiness Squadron

MOC—Maintenance Operations Center

MRT—Maintenance Recovery Teams

MXG—Maintenance Group

MXS—Maintenance Squadron

POL—Petroleum Oils and Lubricants

TA—Transit Alert

T.O.—Technical Order