

**4 MARCH 2009
Certified Current 11 May 2012
Maintenance**



**CONTROL, IDENTIFICATION, AND
MAINTENANCE OF AGE**

COMPLIANCE WITH THIS PUBLICATION IS MANDATORY

ACCESSIBILITY: Publications and forms are available on the e-Publishing website at www.e-Publishing.af.mil for downloading or ordering.

RELEASABILITY: There are no releasability restrictions on this publication.

OPR: 3 EMS/MXMG

Certified by: 3 MXG/CC (Col Michael P. Arceneaux)

Supersedes: 3WGI 21-107, 19 October 2005

Pages: 9

This instruction implements AFPD 21-1, *Air and Space Maintenance*, and prescribes procedures for request, use, control, dispatch, and return of aerospace ground equipment (AGE) (see [Attachment 1](#)). It also establishes responsibilities and procedures for maintenance and status reporting of all AGE. It applies to all personnel assigned to Elmendorf AFB and all host, associate, or temporary duty (TDY) organizations maintaining or requiring the use of AGE. It does not apply to the US Air Force Reserve or Air National Guard units and members. Supervisors will ensure strict compliance with this instruction and applicable directives. It's used in conjunction with Technical Orders (TO) 00-20-1, *Aerospace Equipment Maintenance Inspection, Documentation, Policies, and Procedures*; TO 42B6-1-1, *Quality Control Aviators Breathing Oxygen and Aviators Gaseous Breathing Oxygen*; AFI 25-201, *Support Agreements Procedures*, AFOSHSTD 91-100, *Aircraft Flight Line – Ground Operations and Activities*; and AFI 21-101, *Aircraft and Equipment Maintenance Management*. 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 the AF Form 847 through the appropriate chain of command. Ensure all records created as a result of processes prescribed in this publication are maintained in accordance with Air Force Manual 33-363, *Management of Records*, and disposed of in accordance with Air Force Records Information management System (AFRIMS) Records Disposition Schedule (RDS) located at https://www.my.af.mil/gcss-af61a/afirms/afirms/rds_series.cfm.

SUMMARY OF CHANGES

This document is substantially revised and must be completely reviewed. Removed outdated material that included the statement defining limitations of where equipment monitors are required during equipment use, reference to conformal fuel tank, and reference to SF-6 cart. Updated the description of AGE sub-pool from south side of Hangar 18 to east end of base operations building and west ramp. Included the requirement for bomb lift USERS to return the lift to AGE at 7-day intervals for AGE inspection. Minor changes were made to include changing the 12th to the 525th, COPE THUNDER to read RED FLAG, AGE Cat to AGE Team, and CAMS to read IMDS.

1. General :

1.1. AGE will be assigned to the 3rd Equipment Maintenance Squadron (EMS) for maintenance and control, and the 3 EMS AGE Flight (3 EMS/MXMG) will have custodial responsibility for all powered/non-powered AGE. The only exceptions to this will be equipment allotted under tables of allowance not authorized for use by AGE. The using organization/shop will provide written justification for powered/non-powered requirements exceeding current authorizations. The 3 EMS/MXMG will assign field numbers in accordance with AFI 21-101.

1.2. Organizations with known recurring requirements for AGE will justify this equipment through Air Force supply sources. The 3 EMS/MXMG will provide technical assistance.

1.3. All organizations using AGE will have qualified operators to monitor and ensure safe operation of the equipment. Qualification training may be coordinated through the maintenance training flight (MTF).

2. Procedures/Responsibilities:

2.1. The 3 EMS/MXMG will provide a driver and tow vehicle for each organization for the movement of powered AGE and will assign equipment to organizations by color code and field numbers. Color codes will be as follows:

2.1.1. 732nd Air Mobility Squadron (732 AMS) – White.

2.1.2. 517th Aircraft Maintenance Unit (517 AMU) – White.

2.1.3. 19th Aircraft Maintenance Unit (19 AMU) – Blue.

2.1.4. 525th Aircraft Maintenance Unit (525 AMU) – Gold.

2.1.5. 90th Aircraft Maintenance Unit (90 AMU) – Red.

2.1.6. 962nd Aircraft Maintenance Unit (962 AMU) – Green.

2.1.7. 3rd Wing Base Support/Transient Alert – Orange.

2.1.8. RED FLAG – Black.

NOTE: The AGE driver will respond to powered AGE movement requests from the Aircraft Maintenance Unit (AMU) expediter and Maintenance Operations Center (MOC). When not tasked to move powered AGE, the driver will return to the servicing facility or applicable AGE Team.

2.2. Organizations requiring temporary use of AGE for other than flight line use will submit justification for their requirements by letter to the AGE Flight Chief and/or Superintendent at least 7 days prior. All equipment used off the flight line will be picked up and returned to the AGE Flight by the using organization.

2.2.1. When an organization has a temporary request approved, they will send an appropriate tow vehicle and qualified operator to the AGE Flight (Building 8326) to sign for the loaned equipment. AGE will be issued on an AF Form 1297, *Temporary Issue Receipt*. Requesting organizations will not pre-select or receive equipment until it has been properly receipted.

2.2.2. Equipment requiring fuel will be routed through the appropriate AGE Team for servicing and inspection.

2.3. Users will check AGE for serviceability prior to use. Discrepancies will be documented on AFTO Form 244, *Industrial/Support Equipment Record*. If a discrepancy renders the equipment unusable, the user will immediately report the discrepancy and field number to the AGE Team for repair or replacement. Users will notify the dedicated AGE driver or appropriate AGE Team of fuel

levels below 1/4 tank or oil level below ~~low~~ "mark. Users will also notify the dedicated AGE driver or appropriate AGE Team of all equipment not in use.

2.4. The using AMU's expediter will notify the dedicated AGE driver when the movement of powered AGE is required. Users will have AGE positioned for expedient pick-up, to include properly stowing hoses and cables, dust and rain caps, move equipment outside the 10-foot aircraft circle of safety, and engage parking brakes or chock wheels.

2.5. The Equipment Maintenance Squadron Maintenance Operations Officer must approve locally manufactured AGE after Group Quality Assurance has validated the requirements of the nonstandard items. Locally manufactured SE will be identified, maintained, and controlled by the user. The owning function/organization is responsible for maintenance of the unit and is responsible for obtaining inspection criteria for the nonstandard item in accordance with TO 00-20-1, *Aerospace Equipment Maintenance Documentation, Policies and Procedures*, and TO 34-1-3, *Inspection and Maintenance-Machinery and Shop Equipment*.

2.6. During periods of dissimilar aircraft combat training (DACT) and deployment exercises, AMUs must emphasize management of support equipment inventories to minimize the impact on day-to-day operations.

2.7. Bomblift Procedures:

2.7.1. Bomblifts will be signed out on AF Form 1297 from the appropriate AGE Team supporting their AMU. Operators will select a bomblift from the ready line, perform a ~~prior to use~~ "inspection before starting the unit, and deliver the forms to the AGE supervisor. The AGE supervisor will check the bomblift forms while the operator is signing them out in the log. The AGE supervisor will also check the integrated maintenance data system (IMDS) to ensure the individual is qualified to operate bomblifts. If the individual's name is not in IMDS, and a phone call to 3 MOS/MXOT confirms the individual is not qualified to operate the bomblift, that person will not be allowed to sign the AF Form 1297 and take possession of the bomblift.

2.7.2. If a bomblift becomes inoperative during use, the operator will annotate the discrepancy on the AFTO Form 244 and notify the dedicated AGE driver or servicing AGE Team the bomblift is unserviceable and cannot be started or moved.

2.7.3. After initial dispatch from the AGE facility, the supervisors of using personnel will oversee control of the bomblift within the maintenance complex.

2.7.4. Bomblifts will be returned to the AGE facility at 7-day intervals to ensure serviceability.

2.7.5. **UNDER NO CIRCUMSTANCES** will a bomblift driver ~~exit the operator seat~~ "of the unit with the engine running. AGE maintenance personnel are excluded from this requirement when performing maintenance and weight test.

2.8. Damaged/abused equipment will be reported to the applicable AGE Team immediately upon discovery. The individual discovering damaged/abused equipment will enter the appropriate symbol and discrepancy on the equipment AFTO Form 244. AGE equipment over serviced or filled beyond capacity during use by the user (that is, hydraulic test stands) will be cleaned up by the responsible party prior to pick up by AGE personnel.

3. Non-powered AGE Procedures:

3.1. Non-powered aerospace ground equipment (NPAGE) sub-pools are located:

3.1.1. Outside northeast corner of Hangar 1.

- 3.1.2. Outside north side of Hangar 4.
- 3.1.3. Building 9569.
- 3.1.4. East side of Hangar 8 for 962 AMU.
- 3.1.5. Hardstand 11 for 517 AMU and 732 AMS.
- 3.1.6. West side of Hangar 15.
- 3.1.7. East end of the base operations building and the west ramp.
- 3.1.8. Northwest corner of Hangar 10 (For LOX Servicing).

3.2. Due to the criticality of axle jacks, these items will be issued to the 19th, 90th, and 525th AMU support sections on an AF Form 1297 and updated annually by the owning AGE Team. Axle jacks for the 517th and 962nd AMU will be maintained and issued out by the respective AGE Team. Each AMU will be supplied with their assigned (color coded) hydraulic/oil carts and controlled by the AMU.

3.3. Users/Organizations will:

- 3.3.1. Pick up and immediately return serviceable and unserviceable NPAGE to appropriate sub-pool area when not in use. Discrepancies will be documented on the AFTO Form 244. If a discrepancy renders the equipment inoperable/unserviceable, the user will immediately report the discrepancy and field number to the AGE Facility for repair or replacement. **NOTE:** Towing of Star Wars, maintenance dollies and stands requires the rear casters to be locked prior to movement; failure to do so will cause equipment/vehicle damage.
- 3.3.2. Be responsible for coordinating the delivery of NPAGE to support ancillary and aircraft maintenance training requirements.
- 3.3.3. Be solely responsible for servicing engine oil, hydraulic fluid, liquid coolant carts, and delivering fuel bowsers to the defueling location.

3.4. AMU personnel are responsible for the contents and the monitoring of fuel bowsers. Foreign substances such as oil, hydraulic fluids, chemicals, hardware, safety wire, or trash will not be placed in fuel bowsers. These contaminants will preclude the fuel from being recycled or reclaimed. AMU is responsible for the disposal of all non-recyclable petroleum products thru the Hazardous Waste Facility. User personnel will dispose of all waste/reclaimable petroleum products as required and will drain bowser sumps to remove water that could freeze and damage the equipment. An acceptable procedure for water disposal is outlined below:

- 3.4.1. The water/fuel mixture should be allowed to settle, allowing for complete water/fuel separation.
- 3.4.2. The water can then be drained into a small container and discharged to a drain that is connected to an oil/water separator, which is in-turn, connected to the sanitary sewer system.
- 3.4.3. Extreme care must be taken to ensure that only **WATER** is discharged into the drain. The oil/water separator should be loaded at a flow rate within its design parameters and flow should be stopped the moment the fuel interface is reached.

3.5. The respective AGE Team will notify users of aircraft bowsers when they are due for inspection at least 1 week prior to the inspection due date. The flight/section chiefs of using organizations will ensure aircraft fuel bowsers requiring inspections or repairs are towed and parked on the containment area at POL Farm 3 (located next to Hangar 1). POL personnel will sample and

drain the bowsers in accordance with TO 42B-1-23, *Management of Recoverable and Waste Liquid Petroleum Products*, and return the drained fuel to bulk storage.

3.6. Liquid oxygen (LOX), gaseous oxygen (GOX), and gaseous nitrogen (multiple bottle and SF-6) carts:

3.6.1. LOX cart servicing is the responsibility of the user. The user will ensure the AFTO Form 134, *Aviator Breathing Oxygen Servicing Trailer Log*, is properly annotated. LOX cart servicing will be accomplished between 0700 to 0900 and 1300 to 1500 each flying day. Emergency requests may be called in through the MOC.

3.6.2. Bottle replacement for GOX and gaseous nitrogen is the responsibility of the user. The AGE Flight does not purchase, store, or account for gaseous oxygen/nitrogen bottles.

3.6.3. Maintaining the optimum operating level of nitrogen in the Self-Generating Nitrogen Servicing Cart (SGNSC) is the responsibility of the user.

3.7. AGE personnel will coordinate all LOX and gaseous nitrogen cart inspections and maintenance through the appropriate shop (3 CMS Electro/Enviro and Base Cryogenics). The dedicated AGE driver will transport units to the appropriate shop for the following:

3.7.1. GOX/LOX/gaseous nitrogen systems due periodic inspection (PE): Environmental Control Systems (ECS).

3.7.2. LOX cart system due purge: (ECS).

3.7.3. Trailer due PE: (AGE).

3.8. Routing for PE will be:

3.8.1. Environmental Control System: Unit must have at least 10 gallons and no more than 15 gallons. If quantities are not within the above range, the cart must be filled or drained accordingly.

3.8.2. ECS Plant will purge carts.

3.8.3. The 3 EMS/MXMG will perform trailer inspection, have unit serviced at the LOX plant after inspection, and return unit to the AMUs.

3.8.4. A forms jacket or tube, with AFTO Form 244 and AFTO Form 134, *Aviator Breathing Oxygen Servicing Trailer Log (Liquid/Gaseous)*, will be attached to each unit.

4. Cold Weather Operations:

4.1. At temperatures of +20 degrees F or below, maximum effort will be made to store all not-in-use powered AGE inside. Hangar exclusive equipment (electric hydraulic test stands, generators, air conditioners, and so forth) will be moved outside of the hangar only for relocation to another hangar/maintenance facility or for repair pickup. In all cases, the dedicated AGE driver will be informed immediately to prevent cold soaking of equipment.

4.2. Care must be exercised to prevent unnecessary damage and wear to diesel-powered support equipment. Diesel engines will be started and warmed up, at low RPM, for at least 5 minutes before a load is applied. If the unit is required after completion of a job, it should be placed in a "no load" condition with the engine at idle and monitored by the using organization until used for other tasks.

4.3. Heaters will not be operated within 25 feet of aircraft or explosives. At temperatures of 32 degrees Fahrenheit or below, heater engines may remain running with the **BURNER OFF** and must

not be left unattended. The requesting individual/organization will monitor heaters for safe and proper operation.

5. Deployed AGE:

5.1. AGE required for deployment, site support, etc., will be processed for shipment by the AGE Flight. When AGE personnel do not accompany the TDY, the squadron/organization going TDY will assume custodial responsibility and submit a letter to the 3 EMS commander stating the following: the deployed custodians' names, date trained, type of equipment, quantity, stock number, account number, and document number. The information for the last three items may be obtained from the appropriate AGE Team Manager. The letter will be taken to the equipment management section for processing by the custodian assuming responsibility, prior to departing with the equipment.

5.2. When equipment is to be returned from deployment, site, support, etc., the following will apply:

5.2.1. Equipment will be defueled to meet shipping requirements, washed, and prepared for redeployment by AGE personnel with the assistance of deployed personnel. The deployed AMU assumes this responsibility when AGE personnel are not present.

5.2.2. All shipping arrangements will be made by the mobility noncommissioned officer (NCO) or ranking NCO of the deployment team.

5.3. Upon return from deployment, the mobility NCO/ranking NCO of the deployed team will notify MOC, who will notify the AGE Flight Chief of return shipping arrangements. The owning equipment account custodian will notify the Equipment Management Section of the returned equipment.

6. Equipment Towing:

6.1. Qualified AGE tow vehicles are permitted to tow four heaters in tandem on the outer pintle hooks only in the vicinity of the flight line during year around operations, contingencies, and exercises. Qualified AGE tow vehicles are permitted to tow four heaters in tandem on the center pintle hooks in areas adjacent to the flight line. Outside pintle hooks will not be used off the flight line. No more than two ground heaters may be towed on the pintle hook of other vehicles. Tandem loads will not exceed the load capacity of the tow vehicle. Loads, regardless of the number of the units being towed, will be kept symmetrical. Single units will be towed only on the center pintle hook. When towing two units, the preferred method is to use outside pintle hooks. When towing more than two units simultaneously, distribute the load as evenly as possible on each of the two outer pintle hooks.

6.2. Tandem towing is authorized providing the heaviest unit is nearest the tow vehicle. Four-wheeled units will not be towed behind two-wheeled units.

6.3. Units will not be towed with the center and outside pintle hooks simultaneously.

6.4. Loads not to exceed 16,000 pounds will be towed with the center pintle hook.

6.5. Prior to any towing operation, the vehicle operator will:

6.5.1. Complete a walk-around inspection of the equipment to ensure cables, ducts, doors, panels, and hardware are properly stored, and release the brakes.

6.5.2. Ensure equipment is properly disconnected from the aircraft.

6.5.3. Check for foreign objects and visible signs of fluid leaks, misuse or abuse.

6.5.4. Ensure tow vehicle and AGE equipment pintle hooks are properly closed and safety/cotter pins are installed and retained by friction.

6.5.5. Document all equipment discrepancies on the AFTO Form 244.

7. AFTO Form 244 Documentation. As a minimum, Supervisory Review of AFTO Forms 244 will be accomplished by a qualified AGE NCO/Civilian Equivalent every 180 days. AGE Flight NCOs/Civilian Equivalents will also accomplish equipment forms/IMDS review and document the Supervisory Review on equipment forms prior to returning any AGE to FMC status.

8. Equipment Abuse/Misuse:

8.1. Equipment abuse/misuse will be reported to the using organization's commander for appropriate action and/or compensation to the Air Force for damage repair.

8.2. **UNDER NO CIRCUMSTANCES WILL SUPPORT EQUIPMENT BE USED FOR PERSONAL REASONS OR GAINS.** Violators will be subject to administrative/punitive action.

9. Forms Adopted: AF Form 847, *Recommendation for Change of Publication*, AF Form 1297, *Temporary Issue Receipt*, AFTO Form 134, *Aviator Breathing Oxygen Servicing Trailer Log (Liquid/Gaseous)*, and AFTO Form 244, *Industrial Support Equipment Record*.

THOMAS W. BERGESON, Colonel, USAF
Commander

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

AFPD 21-1, *Air and Space Maintenance*.

AFI 21-101, *Aircraft and Equipment Maintenance Management*.

AFI 25-201, *Support Agreements Procedures*.

AFMAN 33-363, *Management of Records*.

AFOSHSTD 91-100, *Aircraft Flight Line – Ground Operations and Activities*.

TO 00-20-1, *Aerospace Equipment Maintenance Inspection, Documentation, Policies, and Procedures*.

TO 34-1-3, *Inspection and Maintenance-Machinery and Shop Equipment*.

TO 42B6-1-1, *Quality Control Aviators Breathing Oxygen and Aviators Gaseous Breathing Oxygen*.

TO 42B-1-23, *Management of Recoverable and Waste Liquid Petroleum Products*.

Abbreviations

AF—Air Force

AFDPO—Air Force Departmental Publishing Office

AFI—Air Force Instruction

AFMAN—Air Force Manual

AFRIMS—Air Force Records Information Management System

AGE—Aerospace Ground Equipment

AMU—Aircraft Maintenance Unit

DACT—Dissimilar Aircraft Combat Training

DOD—Department of Defense

EMS— Equipment Maintenance Squadron

GOX— Gaseous Oxygen

IMDS—Integrated Maintenance Data System

LOX—Liquid Oxygen

MAJCOM—Major Command

MOC—Maintenance Operations Center

MTF—Maintenance Training Flight

NCO—Noncommissioned Officer

NPAGE—Non-Powered Aerospace Ground Equipment

OPR—Office of Primary Responsibility

RDS—Records Disposition Schedule

SGNSC— Self-Generating Nitrogen Servicing Cart

TDY— Temporary Duty