ROUTINE

DEPARTMENT OF THE ARMY TECHNICAL BULLETIN

Inspection and Repair of Aviation Ground Power Unit (AGPU)
Part Number 83-360A, NSN 1730-01-144-1897 (A-Model)
Part Number 83-360D, NSN 1730-01-466-9371 (D-Model)
Part Number 1024250, NSN 1730-01-552-2313 (E-Model)

Headquarters Department of the Army, Washington, D.C.
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1. **PURPOSE.** The purpose of this TB is to inspect all Aviation Ground Power Units (AGPU) returning from Operation Enduring Freedom/Iraqi Freedom (OEF/OIF) to determine the need for repair and incorporate corrections to reported operational problems and approved configuration changes.

2. **PRIORITY CLASSIFICATION.** ROUTINE.

3. **SUMMARY OF PROBLEM.**

   a. Operations in OEF/OIF may have caused serious deterioration to the AGPUs engine and other subsystems.

   b. Several operational problems, such as malfunctioning emergency shutdown switch and bent tow bars exist with the AGPU, but can be fixed with minor repair/modifications.

   c. Poor engine performance, starting, and other electrical problems exist and must be fixed.

4. **REFERENCES.** AGPU TM 55-1730-229-12 and TM 55-1730-229-34, including the AGPU Lubrication Order LO 55-1730-229-12, AGPU Engine Depot Maintenance Work Order DMWR 1-2835-213, and TB 1-1730-229-30-3 (Stages of Rust and Corrosion) paragraph 10.

5. **TECHNICAL INSPECTION PROCEDURES.** The AGPU shall be inspected for damaged, inoperative, broken, deteriorated, missing, or corroded parts and components that adversely affect AGPU performance using the enclosed procedures and recorded in accordance with the checklist in Paragraph 11, Table 1. Damaged, missing, or otherwise unserviceable components will be annotated on a DA 2404 (provided at Paragraph 15). Technicians familiar with AGPU configurations shall perform the Technical Inspections.

   a. AGPU Operator Preventive Maintenance Checks and Services (PMCS).

      (1) Make sure AGPU is free of tools, equipment, fluid leaks (fuel, engine oil, and hydraulic fluid), dirt, and corrosion.

      (2) Set (lower) parking brake. Disengage clutch lever and ensure quick-release pin is installed.

      (3) Determine whether log book with historical data is with AGPU.

b. EXHAUST.

(1) Make sure area above exhaust flapper is clear of obstructions that may be ignited or damaged by the extremely hot exhaust gases.

(2) Verify exhaust flapper operates (moves) properly.

(3) Examine exhaust system for missing or damaged components. Record on DA 2404 if any part of TB 1-1730-229-30-1, (Inspection and Replacement of Exhaust Installation) has been applied to the AGPU.

c. GROUNDING.

(1) Inspect ground stud for secure mounting.

(2) Verify that the AGPU is properly grounded.

d. FRAME AND HOUSING.

(1) Inspect frame, covers, and panels for dents, cracks, punctures, corrosion, and security.

(2) Determine if the four lifting eyes are in place and inspect for damage.

(3) Inspect access doors for damage to determine whether latches and hinges operate properly.

(4) Inspect Fuel Filler Assembly to ensure assembly is complete and functional for both CCR and gravity fill (open port) refueling.

e. CONTROL PANEL.

(1) Inspect switches, circuit breakers, and indicators for missing parts, damage, or corrosion.

(2) Inspect meters and gauges for cracked glass or signs of corrosion.

(3) Ensure that all stencils, data plates, decals, and schematics are legible. Replace questionable items (see paragraph 8.b.).

f. BATTERY.

(1) Inspect battery compartment, battery, battery tray and battery hold-downs and guides for damage or corrosion. If other than Optima batteries are installed, determine whether vent and drain tubes are in place. Determine if battery hold-downs are tight. Record on DA 2404 if any part of TB 1-1730-229-30-2, “Authorized Modification of Battery Installation” has been applied to the AGPU.

(2) Ensure battery cables and connectors are in-place and determine whether the cables and/or connectors are damaged.

(3) Verify battery charger selector switch on lower tray in electrical compartment is set to proper position (See table 2-4, TM 55-1730-229-12).

g. ENGINE COMPARTMENT.

(1) Inspect lubricating oil level by examining the sight glass on engine gear case; add as required in accordance with (IAW) the LO55-1730-229-12 and TM 55-1730-229-12.

(2) Inspect interior of engine compartment for damage, signs of fuel or oil leaks, dirt, and corrosion.

(3) Inspect air intake and ductwork assembly for punctures, corrosion, and loose mounting screws. Check operation of spring-loaded bypass door by pushing in on door.

(4) Verify that fuel lines are connected to the fuel control unit and control unit is secure.

(5) Verify that bolts on engine mounts are secure and lock wired. Verify that bolts on generator support are secure and lock-wired.

(6) Inspect hour meter for damage and is securely installed.

(7) Inspect starter assembly to determine if power cables are secure.

(8) Inspect hydraulic hoses for cuts, splits, or leaks and verify hoses are securely fastened.

(9) Inspect hydraulic pump for security, damage, leaks, or loose fittings.

h. HYDRAULIC MODULE.

(1) Ensure hydraulic reservoir is at least 3/4 full.

(2) Inspect hydraulic control panel switches and indicators for missing or loose parts and corrosion.

(3) Inspect reservoir gauge, thermometer, and pressure gauge for leaks and cracked glass.

(4) Check all hoses, manifold ports, and hose ends for metal dust caps or plug protection. (If hoses are more than five years old, replace them per the mandatory replacement parts list, paragraph 13, table 3.)

(5) Inspect hydraulic filter housing assembly, filter head indicator, and wiring for cracks, damage, or leaks. Replace filters IAW TM 55-1730-229-12, TM 55-1730-229-34, and LO-55-1730-229-12.

(6) Inspect the vent dryer desiccant canister to determine if it is properly installed and desiccant is within the limits of TM 55-1730-229-12.

i. AC AND DC POWER CABLES.

(1) Inspect power cables for damage to insulation noting any deep cuts or gouges to the insulation indicating “unsafe for operation.”

(2) Inspect power cable electrical connectors for damage and freedom from dirt and corrosion.

j. PNEUMATIC HOSE.

(1) Verify that pneumatic hose clamps on internal and output hoses are secure, inspect hoses for

correct hose clamps and hose type and splits or cuts, and inspect connector fitting for damage and proper operation and freed of dirt and corrosion.

NOTE

All unsheathed, red hoses manufactured by Flexfab must be replaced by HBP Industries (Thermoid) hoses, CAGE (98891).

(2) Verify that the aircraft coupler is secure, operational, and not damaged.

k. PROPULSION SYSTEM.

NOTE

Minor dents on components that do not affect the serviceability are acceptable.

(1) Inspect axles and suspension. Inspect axle assembly for cracked or dented housing; bent, missing, or broken components; loose or missing fasteners; broken or missing lubrication fittings; and lubricant leaks.

(2) Inspect tires and wheels for condition (excessive wear, cuts, or foreign objects). Check that each tire has 3/16 inch or more of tread remaining, and is in good serviceable condition. Check that all tires on a vehicle are matched to provide proper performance and approximately equal tread life. Tires will not show evidence of cupping, chunking, or dry rot. Ensure tires do not have cuts or cracks and that the air inflation pressures are equal. Inspect for rubber separation or bulges on tire sidewalls. Inspect wheels for missing lug nuts. Verify wheels are free of cracks, breaks and damaged mounting holes.

(3) Inspect tow bar speed/direction control assembly to determine if it works freely; inspect the dead-man switch for damage and check for loose or missing components inside and external of housing cover.

(4) Inspect brake cable assembly for broken strands, missing or loose fasteners, and conditions indicating improper operation. Verify that the hand or parking brake is complete with all linkage, in a serviceable condition, and properly adjusted.

(5) Inspect traction motor for housing damage, loose or missing fasteners, broken or loose terminals, loose or missing brush covers, and corrosion or contamination.

(6) Inspect clutch assembly for bent or cracked main housing, bent or broken components and loose or missing components.

(7) Inspect gear drive assembly for dented, cracked, or missing housing components, and lubricant leaks.

l. ELECTRICAL CHECKS.

NOTE

Connect batteries and set control panel MASTER switch to ON, and perform following checks:

(1) Verify that BATTERY VOLTAGE meter indicates in green band.

(2) Push PRESS TO TEST pushbutton and verify all indicator lights on control panel illuminate.

NOTE

On the D- and E-Model AGPUs, the DC voltage monitoring function of the GCU has been disabled. The DC VOLTAGE FAULT will not illuminate when the PRESS TO TEST button is pushed.

(3) Determine whether reading on FUEL gauge is functioning properly.

(4) On hydraulic control panel, turn the POWER SWITCH to ON and push PRESS TO TEST LIGHTS and verify that all indicator lights illuminate.

(5) Set MASTER SWITCH to OFF.

6. FUNCTIONAL INSPECTION PROCEDURES. The functional performance of the AGPU shall be assessed using the following procedure and recorded in accordance with the checklist in paragraph 12, Table 2. The functional inspection shall be performed after the Technical Inspection. All findings noted during the Technical Inspection that are required for safe operation of the AGPU shall be corrected prior to performing the functional inspection. The AGPU must start, operate, and produce hydraulic, pneumatic, and AC/DC power to perform a full functional inspection. If the AGPU is not fully functional, the AGPU must be repaired prior to the start of the functional inspection.

a. PLACE THE AGPU IN OPERATION in accordance with Paragraph 2-3 of TM 55-1730-229-12.

(1) Listen to gas turbine engine (GTE) for abnormal sounds, knocks or other signs of wear.

(2) Inspect and observe hydraulic output pressure gauge for a minimum reading of 450-600 psig. If this minimum reading is not obtained, immediately shut down the AGPU and troubleshoot IAW TM 55-1730-229-12 and TM 55-1730-229-34.

(3) Observe all meters for movement.

(4) Inspect AGPU for oil, hydraulic, and fuel leaks.

(5) Remove AGPU from operation IAW paragraph 2-12 of TM 55-1730-229-12 and TM 55-1730-229-34.

(6) At the Hydraulic Control Panel, turn Power ON. Attempt to start the AGPU. The AGPU should not start. If the AGPU does start, remove AGPU from operation and troubleshoot IAW TM 55-1730-229-12 and TM 55-1730-229-34. Repeat this procedure of attempting to start the AGPU with the load switch ON, one at a time, for DC Power, AC Power, and Pneumatic. The AGPU should not start with any load switch turned ON.

(7) Start the AGPU and allow the AGPU to run for a minimum of 2 minutes. SHUT DOWN GTE with the Emergency Shut Down to ensure its operation.

(8) Start the AGPU and allow the AGPU to run for a minimum of 5 minutes before the application of any loads.

b. MONITOR CONTROL PANEL METERS/INDICATORS.

(1) Check hydraulic pressure on hydraulic control panel pressure gauge immediately after engine start. Shut down engine if pressure reading is less than 450 psig.

(2) If EGT meter reads in yellow band, shut down the AGPU and troubleshoot IAW TM 55-1730-229-12 and TM 55-1730-229-34.

(3) If LOW FUEL indicator illuminates, shutdown and refuel unless operations can be completed in 30 minutes.

(4) If INLET FILTER BLOCKED indicator illuminates, shutdown and determine cause of problem; remove all obstructions from air intake louvered panel.

(5) If COMPT/GEN HI TEMP indicator illuminates, shut down the AGPU and troubleshoot IAW TM 55-1730-229-12 and TM 55-1730-229-34. Record lamp indications prior to setting MASTER SWITCH to OFF.

(6) If FAULT INDICATOR illuminates and automatic shutdown occurs, record lamp indications prior to setting MASTER SWITCH to OFF.

(7) If Hydraulic control panel red HI TEMP indicator illuminates, shut down the AGPU and troubleshoot IAW TM 55-1730-229-12 and TM 55-1730-229-34.

c. AGPU OPERATION.

NOTE

After hydraulic operations are complete, reduce hydraulic pressure to approximately 500 psig by holding panel switch to DECREASE.

(1) Verify operation of DC Power by applying 100 amp load.

(2) Verify operation of battery charger by measuring DC voltage.

(3) Test operation of both the 400 Hz and 60 Hz convenience receptacles (CR).

(4) Test operation of hydraulic system IAW paragraph 14, Table 4, paragraph 4.5.6 of this TB.

(5) Test operation of pneumatic system IAW paragraph 14, Table 4, paragraph 4.5.2 of this TB.

d. PROPULSION. Verify operation of the Propulsion System IAW TM 55-1730-229-12 and TM 55-1730-229-34.

e. ENGINE.

(1) Perform an AC Overload Check IAW TM 55-1730-229-12 and TM 55-1730-229-34.

(2) GTEs that fail the AC Overload Check shall be troubleshot and repaired IAW TM 55-1730-229-12 and TM 55-1730-229-34. The AGPU shall be subjected to the AC Overload Check again. GTEs that fail the AC Overload Check a second time shall be repaired IAW DMWR 1-2835-213 or OEM specifications. Replacement GTEs with more than 250 hours must have been through a repair program. In all cases, the AGPU and the replaced GTE will be subjected to the AC Overload Check again.

(3) All D- and E-Model AGPUs will be subjected to the Maintenance Operational Check, AC Overload Check, paragraph 10f (14) of MWO 1-1730-229-50-2 to determine the need to repair the engine.

(4) All "A model" AGPUs will be subjected to the following Maintenance Operational Check to determine the need to repair the engine.

CAUTION

If GTE surge occurs, immediately set load bank to zero and discontinue test.

(a) Attach AC cable to AC load bank.

(b) Set AC load bank to zero.

(c) Set AGPU current limit selector to 45 KW.

(d) Start AGPU and set AC POWER switch to ON. Check for proper indications on load bank.

(e) Set hydraulic module power and output switch to ON.

(f) Increase system pressure to 3300 psi.

(g) Open HIGH PRESSURE BYPASS valve until pressure drops to 3000 psi and lock bypass valve.

(h) Set load bank to 40 KW (133% on the AGPU AC % LOAD meter).

(i) After 30 seconds, set load bank to 55 KW. AGPU should shed load in 4-7 seconds.

(j) Set AC load bank to OFF.

(k) Reduce hydraulic pressure to 500 psi. Close HIGH PRESSURE BYPASS valve.

(l) Allow load bank to cool.

(m) Set AC POWER switch to OFF.

7. APPLICATION.

This TB shall be applied to all AGPUs.

8. MAINTENANCE REQUIREMENTS.

a. PAINT. The AGPU shall have a final topcoat of CARC paint in accordance with MIL-DTL-53072. Color shall be SAND 33303 unless otherwise specified by PM AGSE.

b. DATA PLATES. All data plates, decals and schematic diagrams shall be legible. Replace questionable items.

c. MODIFICATION WORK ORDERS (MWO). None.

d. SEAL AND GASKET LEAKAGE. There shall be no leakage permitted.

e. **MANDATORY REPLACEMENT PARTS.** See paragraph 13, Table 3, for the Mandatory Replacement Parts Lists. Locking devices (such as lock washers, lock nut, etc.), gaskets, seals, pneumatic and engine clamps, and o-rings that are removed shall not be re-used and must be replaced.

f. **HARDWARE.** Hardware shall be replaced if broken. Hardware may be reconditioned/re-used or equal or greater value hardware substituted if the material is not readily available through the supply channels as long as material meets all MIL specifications and drawings.

g. **CORROSION AND PAINTING** (See paragraph 10). New internal items that are replacement items shall not be repainted. Access doors, covers, panels, and the control box shall only be disassembled as necessary to facilitate any repair. Damaged and corroded items shall only be disassembled to a level where repairs can be made. Replacement of items or next higher assembly may be an option. Interior surfaces shall only be cleaned and shall not be repainted unless an item has been repaired. The repaired surface(s) then shall be spot painted. Stage 1 and 2 rust on interior surfaces is acceptable and shall not require a repair or paint with the exception that no corrosion is acceptable on any sealing or electrical surface or contact. Exterior surfaces shall be painted with CARC paint IAW MIL-DTL-53072; color shall be SAND 33303 unless otherwise specified by AMCOM.

h. **BASIC ISSUE ITEMS.** The following items shall be repaired or replaced as required: engine crankcase fill and drain tube hose assembly (Hose Assembly -- Oil Drain for Engine – P/N DB75-48-TEDESLO), log book with records and all forms (Ref. DA PAM 750-8, par. 2-7 through 2-11), and if provided with the AGPU, the De-Icing and Chinook Hose Kit. A functional 5 pound carbon dioxide fire extinguisher shall be provided.

i. **FRAME AND HOUSING.**

(1) Replace acoustic insulation panels and roof seals as required.

(2) Repair any welds or broken attaching hardware to frame and or housing as required.

(3) Clean and inspect all sub-structure and mounting points for sub-components.

(4) Overall frame and housing (all top and side panels, to include louvered and non-vented doors) should be restored to “like new” condition.

j. **BATTERY.**

(1) If not installed, install new Optima batteries IAW TB 1-1730-229-30-2, “Authorized Modification of Battery Installation.”

k. **EXHAUST.**

(1) If not installed, replace AGPU exhaust assembly IAW TB 1-1730-229-30-1, “Inspection and Replacement of Exhaust Installation.”

l. **FUEL TANK.**

(1) Fuel tank shall be inspected, removed and cleaned.

(2) All non-metallic filters, o-rings, and gaskets shall be replaced. All hoses shall be replaced as required. Screen strainers shall be cleaned or replaced.

m. ENGINE.

(1) Assess from AGPU log book and GTE hour meter the actual GTE hours usage.

(2) If GTE usage has reached 1500 hours, remove GTE for overhaul in compliance with TM 55-1730-229-34, paragraph 9-17.

(3) If GTE usage has reached 500 hours or 1000 hours, remove GTE from AGPU and disassemble, inspect and repair IAW TM 55-1730-229-34, paragraph 9-8 to 9-15.

(4) If not installed, install fuel filter/separator IAW TB 1-1730-229-20-1.

(5) Inspect and clean combustion chamber and fuel nozzle assembly IAW TM 55-1730-229-12 and TM 55-1730-229-34. A cracked combustion chamber may be repaired IAW DMWR 1-2835-213.

(6) Fuel nozzle shall be checked and cleaned; replace as required.

(7) Replace igniter plug assembly IAW TM 55-1730-229-12 and TM 55-1730-229-34.

(8) Replace oil and oil and fuel filters. Clean or replace strainers IAW TM 55-1730-229-12 and TM 55-1730-229-34.

(9) Replace thermocouple IAW TM 55-1730-229-12 and TM 55-1730-229-34.

(10) Inspect GTE hour meter for broken glass and mounting hardware. Repair or replace as required.

(11) Clean Air Cleaner Assembly IAW TM 55-1730-229-12 and TM 55-1730-229-34.

(12) Inspect and repair or replace hydraulic spacer plate as required.

n. HYDRAULIC.

(1) The Hydraulic Module shall be removed, inspected, and serviced IAW TM 55-1730-229-12 and TM 55-1730-229-34.

(2) The Hydraulic Module Heat Exchanger shall be repaired as required. Replace all damaged and missing heat exchanger shock mounts.

(3) Replace all filters and vent dryer desiccant IAW TM 55-1730-229-12 and TM 55-1730-229-34. Install new 2- and 5-micron filters and place the labels on the respective filter hoursings.

(4) Replace the three nonmetallic hydraulic hoses and quick disconnect o-rings (or quick-disconnect if required) between the hydraulic pump and module/drain.

(5) Inspect and clean Hydraulic Reservoir as required; replace the fluid to capacity IAW LO55-1730-229-12 with MIL-PRF-83282 fluids. Place an adhesive label on the module and ensure 30-foot hydraulic hoses have a metal tag noting the use of MIL-PRF-83282 fluid.

(6) Verify the hydraulic pressure gauge operates correctly; replace if required.

(7) Inspect the Dual Service Manifold, Hydraulic Pump, and Hydraulic Module and the Thermometer for leaks and repair or replace IAW TM 55-1730-229-12 and TM 55-1730-229-34.

(8) Provide Dual Service Manifold, P/N 8140 or P/N 1024269 if not provided with AGPU.

(9) Replace all hydraulic adapter hose assemblies that are 5-years old or more. Provide any hydraulic adapter hose assembly and hydraulic fill tube if not provided with AGPU.

(10) Ensure that a 3/4 full mark is on the aluminum sight glass housing of the reservoir fill level gauge.

o. PROPULSION.

(1) Remove brake drums and inspect service brakes. Check brake lining to ensure a minimum of 50 percent of original thickness remaining above rivet head or 50 percent of original thickness if bonded. Lining shall show no evidence of oil or grease. Brake backing plates and related parts shall be properly mounted, free of bends, rust, corrosion, and distortion.

(2) Inspect brake drums. Brake drums shall not be cracked or distorted. Scores on drum braking surfaces that reduce lining-to-drum contact more than 10 percent are not acceptable. Refinished drums that are machined to maximum allowable diameter are acceptable if remaining scores do not exceed 1/32 inch in width or 1/64 inch in depth. “Oversize” drums shall be stamped on outer face of drum just above and between two studs on finished drums. Linings shall not be shimmed. New shoe’s and lining assemblies, if required, shall be used on both brakes of the same axle, using the same brake lining composition. Drums must be matched per axle and will be checked and serviced in accordance with the applicable TM 55-1730-229-12 and TM 55-1730-229-34.

(3) Grease and properly adjust wheel bearings. Springs shall be free of cracked or broken leaves, excessively worn bushings, and shall show no indication of a permanent set. Spring mounting hardware shall be in place and free of damage. Axle tubes shall be free of breaks and cracks, radius rods shall be straight, and rubber bushings shall be serviceable. Weather checked rubber grommets are acceptable. Axle spindle threads shall be free of wear, cross threads or damage. Axle spindles shall be free of bends and damaged bearing seats.

(4) Remove chain case cover and inspect drive chain and running gear for damaged and worn components. Replace components as needed.

(5) Inspect electric brake housing for damage, including damage or distortion of strain relief connector and missing or loose fasteners. Repair damage and distortion and replace missing (and secure loose) fasteners.

(6) As required, tires shall be replaced with NSN 2610-01-439-6214. Any whitewall tire shall be mounted so that the whitewall is facing the inside.

p. PNEUMATIC.

(1) Replace all pneumatic output hoses and internal bleed air hoses that are leaking.

(2) Replace all unsheathed, red hoses with hoses manufactured by HBP Industries (Thermoid), (CAGE 98891) NSN 4720-01-481-5139, P/N AD-1503-4-1000.

q. GROUNDING CABLE. Ensure all AGPUs are provided with a grounding wire with clamp.

r. CONTROLS AND INSTRUMENTS.

(1) Replace light bulbs as required.

(2) Inspect controls and instruments for proper operation and replace as required.

(3) All cables and harnesses shall be cleaned and inspected in-place, then repaired or replaced as needed. Connectors and terminal ends shall be cleaned or replaced if any corrosion is observed. Replacement wires shall be marked with wire numbers, routed along, and neatly attached to the existing harness. Replace missing or damaged terminal lugs. Lightly pull all wire splices to verify physical integrity.

s. PREVENTATIVE MAINTENANCE CHECKS AND SERVICES (PMCS). Perform all the required PMCS specified IAW TM 55-1730-229-12, supported by TM 55-1730-229-34 and LO55-1730-229-12.

t. TESTING. Testing of the completed AGPU will be as follows (Complete test sheet IAW Paragraph 14, Table 4, Final Acceptance Test Procedure or equivalent):

(1) Perform the Maintenance Operational Checks numbers 1-7, 11, and 12 on All D- and E-model AGPUs as specified in the MWO 1-1730-229-50-2, paragraph 10.f.

(2) Propulsion test IAW Final Acceptance Test Procedure paragraph 14, Table 4 (Final Acceptance Test Procedure), step 4.4.1.

(3) Pneumatic test IAW Final Acceptance Test Procedure paragraph 14, Table 4 (Final Acceptance Test Procedure), step 4.5.2.

(4) Hydraulic test IAW Final Acceptance Test Procedure paragraph 14, Table 4 (Final Acceptance Test Procedure), step 4.5.6.

(5) AC test. Operational load run of 30 minutes IAW paragraph 14, Table 4 (Final Acceptance Test Procedure), step 4.5.3.

(6) DC test. Operational load run of 30 minutes IAW paragraph 14, Table 4 (Final Acceptance Test Procedure), step 4.5.5.

(7) AC/DC Combined test. Operational load run of 30 minutes at AC and DC loads IAW paragraph 14, Table 4 (Final Acceptance Test Procedure), step 4.5.8.

(8) Other testing IAW paragraph 14, Table 4 (Final Acceptance Test Procedure).

(9) Using the Hydraulic Oil Sampling/Purge Adapter, take a hydraulic fluid sample for AOAP analysis until the results meet/exceed AOAP criteria. Record all AOAP results in log book.

(10) Take an engine oil sample for AOAP analysis until the results meet/exceed AOAP criteria. Record all AOAP results in log book.

u. PREPARATION FOR SHIPMENT. Prepare AGPU for shipment IAW TM 55-1730-229-12 and TM 55-1730-229-34. Confirm large battery cable quick disconnect is disconnected before shipment, but ensure the tow alarm connector is not disconnected.

v. QUALITY ASSURANCE. Both inspections shall be noted on the Final Test Sheet, paragraph 14, Table 4 (Final Acceptance Test Procedure).

(1) Perform an in-process inspection before the panels and doors are installed.

(2) After PMCS, testing, and painting have been completed, perform a quality assurance final inspection. Inspect test data sheets and all the parts, components, and problems identified in the Technical and Functional Inspections; repair as needed. Perform Operator and Unit PMCS inspections. Ensure AGPU is equipped with all required BII. Upon successful completion of the QA inspection, PM AGSE will certify the AGPU for re-issue to the field, unless PM AGSE delegates this responsibility to a QA authority.

9. SUPPLY/PARTS AND DISPOSITION. N/A

10. STAGES OF RUST AND CORROSION.

a. As an aid in evaluating rust damage and planning rust repair actions, rust shall be classified into four stages:

(1) Stage 1 – Red, black, or white corrosion deposits on surface accompanied by minor etching and pitting. Base metal is sound.

(2) Stage 2 – Powered, granular and scaled condition resulting in erosion of material from the surface. Base metal is sound.

(3) Stage 3 – Surface condition and corrosion deposits are similar to Stage 2, except that metal in the corroded areas is unsound and small pinholes may be present.

(4) Stage 4 – Corrosion has advanced to a point where the surface has been penetrated. No metal remains at point of severest corrosion. There are rust holes in the surface area, or metal is completely missing along the edge.

b. Exterior surfaces of units with areas of Stage 1 or Stage 2 rust shall be blasted, cleaned, treated, primed, and painted. Units with areas of Stage 3 or Stage 4 rust shall be repaired, cleaned, treated, primed, and painted in those areas or should have assemblies replaced with new assemblies if repair is not economical.

c. Any evidence of corrosion on working surfaces of close tolerance parts is not acceptable. Pitting or surface deterioration in the area of any seal or gasket is not acceptable if it affects the proper functioning and/or proper performance of the applicable component.

11. **TECHNICAL INSPECTION CHECKLIST.**

Table 1. Technical Inspection Checklist

	Technical Inspection	Condition
1	Make sure AGPU is free of tools, equipment, fluid leaks (fuel, engine oil, and hydraulic fluid), dirt, and corrosion.	
2	Set (lower) parking brake. Disengage clutch lever and ensure quick-release pin is installed.	
3	Make sure area above exhaust flapper is clear of obstructions that may be ignited or damaged by the extremely hot exhaust gases.	
4	Verify exhaust flapper operates properly.	
5	On a D- and E-Models, inspect the exhaust system for missing/loose tape and insulation and or damaged components.	
6	Inspect ground stud for secure mounting and nut-retaining clip is present.	
7	Verify the AGPU is properly grounded.	
8	Inspect frame, covers, latches, and panels for dents, cracks, punctures, corrosion, and security.	
9	Determine if the four lifting eyes are in place and inspect for damage.	
10	Inspect access doors for damage, and ensure that latches and hinges operate properly.	
11	Inspect switches, circuit breakers, and indicators for missing parts, damage, or corrosion.	
12	Inspect meters and gauges for cracked glass or signs of corrosion.	
13	Ensure that all stencils, data plates, decals, and schematics are legible. Questionable items shall be replaced.	
14	Inspect battery compartment, battery, battery tray and battery hold-down and guides for damage or corrosion. If other than Optima batteries are installed, determine whether vent and drain tubes are in place. Determine if battery hold-downs are tight.	
15	Ensure that battery cables and connectors are in-place and not damaged.	
16	Verify the battery charger selector switch on lower tray in electrical compartment is set to proper position (See table 2-4, TM 55-1730-229-12).	

Table 1. Technical Inspection Checklist (Continued)

	Technical Inspection	Condition
17	Inspect lubricating oil level by examining the sight glass on engine gear case; add oil as required IAW the LO55-1730-229-12 and IAW TM 55-1730-229-12 and TM 55-1730-229-34.	
18	Inspect interior of engine compartment for damage, signs of fuel or oil leaks, dirt, and corrosion.	
19	Inspect air intake and ductwork assembly for punctures, corrosion, and loose mounting screws. Check operation of spring-loaded bypass door by pushing in on door.	
20	Verify that fuel lines are connected to fuel control unit.	
21	Verify that bolts on engine mounts are secure and lock wired. Verify that bolts on generator support are secure and lock wired.	
22	Inspect hour meter for damage and for proper/secure installation.	
23	Inspect starter assembly to ensure power cables are secure.	
24	Inspect hydraulic hoses for cuts, splits, or leaks; verify hoses are securely fastened.	
25	Inspect hydraulic pump for security, damage, leaks, or loose fittings.	
26	Ensure hydraulic reservoir is at least ¾ full.	
27	Inspect hydraulic control panel switches and indicators for missing or loose parts, and corrosion.	
28	Inspect reservoir gauge and thermometer, and pressure gauge for leaks or cracked glass.	
29	Verify all hose manifold ports and hose ends are protected with metal dust caps or plugs.	
30	Inspect hydraulic filter housing assembly, filter head indicator, and wiring for cracks, damage, or leaks.	
31	Inspect vent dryer desiccant canister assembly (all associated parts) for proper/secure installation.	
32	Inspect AC and DC power cables for damage to insulation.	

Table 1. Technical Inspection Checklist (Continued)

	Technical Inspection	Condition
33	Inspect all electrical connectors on AC and DC power cables for damage and freedom from dirt and corrosion.	
34	Verify that pneumatic hose clamps on internal hose and external chafe liner are secure, inspect hoses for correct hose type and splits or cuts, and inspect connector fitting for damage to locking-un-locking devise and freedom from dirt and corrosion.	
35	Verify that the AGPU pneumatic hose aircraft coupler is secure and not damaged.	
36	Inspect axles and suspension. Inspect axle assembly for cracked or dented housing; bent, missing or broken components; loose or missing fasteners; broken or missing lubrication fittings; and lubricant leaks. NOTE: Minor dents on components that do not affect the serviceability are acceptable.	
37	Inspect tires and wheels for condition (excessive wear, cuts, or foreign objects). Each tire must have 3/16 inch or more of tread remaining, and be in good serviceable condition. All tires on an AGPU vehicle must be matched to provide proper performance and approximately equal life. Tires will not show evidence of cupping or chunking. Tires will not have cuts or cracks. Rubber separation or bulges on tire sidewalls are not acceptable. Inspect wheels for missing lug nuts. Wheels will be free of cracks, breaks and damaged mounting holes, note odd rims that do not match.	
38	Inspect tow bar speed/direction control assembly for damage and loose or missing components, and dented housing. NOTE: Minor dents on components that do not affect the serviceability are acceptable.	
39	Inspect brake cable assembly for broken strands, missing or loose fasteners, and improper operation. The hand or parking brake will be complete with all linkage in a serviceable condition and properly adjusted and lubed.	
40	Inspect traction motor for housing damage; loose or missing fasteners or dust covers, broken or loose terminals and covers; loose or missing brush covers and corrosion or contamination. NOTE: Minor dents on components that do not affect the serviceability are acceptable.	

Table 1. Technical Inspection Checklist (Continued)

	Technical Inspection	Condition
41	Inspect clutch assembly for bent or cracked main housing, bent or broken components, and loose or missing components.	
42	Inspect gear drive assembly for dented, cracked, or missing housing components, and lubricant leaks. NOTE: Minor dents on components that do not affect the serviceability are acceptable.	
43	NOTE: Connect batteries and set control panel MASTER switch to ON. Verify that BATTERY VOLTAGE meter indicates in green band.	
44	Push PRESS TO TEST pushbutton and check that all indicator lights on control panel illuminate. NOTE: On D- and E-Models, the DC voltage monitoring function of the GCU has been disabled. The DC VOLTAGE FAULT will not illuminate when the PRESS TO TEST button is pressed.	
45	Determine whether reading on FUEL gauge functions properly.	
46	On hydraulic control panel, turn POWER SWITCH to ON and push PRESS TO TEST LIGHTS and verify that all indicator lights illuminate.	

12. **FUNCTIONAL INSPECTION CHECKLIST.**

Table 2. Functional Inspection Checklist

	Functional Inspection	Condition
1	Place the AGPU in operation IAW TM 55-1730-229-12 (Paragraph 2-3) and TM 55-1730-229-34. Earth-ground the AGPU.	
2	Listen to engine for abnormal sounds, knocks or other signs of wear.	
3	Inspect and observe hydraulic output pressure gauge for a minimum reading of 450-600 psig. If this minimum reading is not obtained, immediately shut down the AGPU and troubleshoot IAW TM 55-1730-229-12 and TM 55-1730-229-34.	
4	Observe all meters for movement.	
5	Inspect AGPU for oil, hydraulic and fuel leaks.	
6	Remove AGPU from operation IAW Paragraph 2-12 of TM 55-1730-229-12 and TM 55-1730-229-34.	
7	At the Hydraulic Control Panel, turn Power ON. Attempt to start the AGPU. The AGPU should not start. If the AGPU does start, REMOVE AGPU FROM OPERATION and troubleshoot IAW TM 55-1730-229-12 and TM 55-1730-229-34. Repeat this procedure of attempting to start the AGPU with the load switch ON, one at a time, for DC Power, AC Power, and Pneumatic. The AGPU should not start with any load switch turned ON.	
8	Start the AGPU and allow the AGPU to run for a minimum of 2 minutes, SHUT DOWN GTE with the Emergency Shut Down to ensure its operation. After this check restart the GTE and operate for 5 minutes before the application of any loads.	
9	Monitor Control Panel meters and indicators and record readings.	
10	If EGT meter reads in yellow band, shut down the AGPU and troubleshoot IAW TM 55-1730-229-12 and TM 55-1730-229-34.	
11	If LOW FUEL indicator illuminates, shutdown and refuel unless operations can be completed in 30 minutes.	
12	If INLET FILTER BLOCKED indicator illuminates, shutdown and determine cause of problem; remove all obstructions from air intake louvered panel.	

Table 2. Functional Inspection Checklist (Continued)

	Functional Inspection	Condition
13	If COMPT/GEN HI TEMP lamp illuminates, shut down the AGPU and troubleshoot IAW TM 55-1730-229-12 and TM 55-1730-229-34. Record lamp indications prior to setting MASTER SWITCH to OFF.	
14	FAULT INDICATOR illuminates. If automatic shutdown occurs, record lamp indications prior to setting MASTER SWITCH to OFF.	
15	If Hydraulic control panel red HI TEMP indicator illuminates, reduce hydraulic pressure to 500 psig, then shut down the AGPU and troubleshoot IAW TM 55-1730-229-12 and TM 55-1730-229-34.	
16	Verify operation of DC Power by applying 100 amp load.	
17	Verify operation of battery charger by measuring DC voltage output.	Selector Position Voltage / Specification Voltage / Actual 28.5 VDC / 26 to 31 VDC / _____ 30.5 VDC / 28 to 33 VDC / _____ 32.5 VDC / 29.5 to 34.5 VDC / _____
18	Test operation of both the 400 Hz and 60 Hz, 110 Volt AC convenience receptacles. Test the operation of the GFCI if so equipped.	
19	Test operation of the hydraulic system IAW Paragraph 14, Table 4, Paragraph 4.5.6.	
20	Test operation of the pneumatic system IAW Paragraph 14, Table 4, Paragraph 4.5.2.	
21	Verify operation of the Propulsion System IAW TM 55-1730-229-12 and TM 55-1730-229-34.	
22	Perform AC Overload Check IAW TM 55-1730-229-12. Engines that fail the AC Overload Check shall be troubleshot and repaired IAW TM 55-1730-229-12 and TM 55-1730-229-34. The AGPU shall be subjected to the AC Overload Check again. Engines that fail the AC Overload Check a second time shall be removed and repaired.	
23	All D- and E-model AGPUs will be subjected to the Maintenance Operational Check, AC Overload Check, paragraph 10f (14) of MWO 1-1730-229-50-2 to determine the need to repair the engine.	
24	All “A” model AGPUs will be subjected to the Maintenance Operational Check, AC Overload Check, paragraph 10f (14) of MWO 1-1730-229-50-2, with the following exception (see paragraph 6.e.(4)), to determine the need to repair the engine.	

13. **MANDATORY REPLACEMENT PARTS LIST.**

Table 3. Mandatory Replacement Parts List

AGPU RESET: Mandatory Parts Replacement List for MEP-360A/D.			
DESCRIPTION	PART NUMBER	NSN	QTY
Gasket, Fuel Intake		5330-01-230-7033	1
Gasket, Seal		5330-01-230-7032	1
Packing		5330-01-251-9372	1
O-ring, Low Fuel Switch O-ring		5331-00-263-8031	11
Fuel Filter/Water Separator Element		2910-01-195-7636	1
Fuel Filter/Water Separator Element Gasket		5330-01-288-3600	1
GTE FCU Filter		4330-01-113-1177	1
GTE FCU Filter o-ring		5330-01-117-1016	1
GTE Igniter Plug Assembly		2920-01-178-0853	1
GTE Igniter Plug Assembly Washer		5310-00-167-0705	1
Starter o-ring		5330-00-008-5858	1
GTE Gasket, Thermocouple		5330-01-012-5174	1
GTE Gasket, Fuel Nozzle		5330-01-012-3060	1
Seal, Grease		5330-00-576-4465	2
Seal, Roof	83-14643		31'
GTE Oil Filter Element		4330-00-319-1086	1
O-ring Oil Filter		5330-00-340-6040	1
O-ring Oil Filter		5330-00-008-7877	2
HP Hydraulic Filter Element		4330-01-220-3020	1
O-ring HP Filter Element		5330-00-729-4992	2
O-ring LP Filter Element		5330-00-833-7491	2
LP Hydraulic Filter Element		4330-01-220-3021	1
Vent Dryer Desiccant		6850-00-680-2233	5
Gasket Dryer Assembly		5330-00-808-0794	1
Filter Dryer Assembly	91318	2945-01-267-7461	2
Fire Extinguisher (Per GEN-MIM-2005-011)		4210-00-270-4512	1
Fire Extinguisher Bracket		4210-00-640-1841	1
95% Enable (K1) Relay		5945-00-810-2973	1
10A, GTE Latching (K2) Relay		5945-00-810-2972	1
10A Battery Charger (K3) Relay		5945-00-809-7480	1
35A Circuit Breaker (CB2) on Upper Tray		5925-00-836-7914	1

14. **FINAL TEST SHEET.** All AGPUs will be acceptance-tested IAW the most current version of the approved AGPU ATP, AVNS-ATP-10777. Table 4 reflects the ATP as of the date of this publication. In the event of differences between Table 4 and the official ATP, AVNS-ATP-10777 will take precedence over Table 4.

Table 4. FINAL ACCEPTANCE TEST PROCEDURE (P/Ns MEP 83-360A/D, NSN 1730-01-144-1897 & NSN 1730-01-466-9371; P/N 1024250, NSN 1730-01-552-2313)

1.0 INTRODUCTION

1.1 **Test Objective**

To demonstrate that an AGPU is physically and functionally operational and document end item final inspection and acceptance by the Government. This ATP must be performed by a direct support / depot-level trained technician with operational knowledge of the AGPU.

1.2 **Test Purpose**

To determine that the RESET AGPU was properly repaired; that inherent safety devices are correctly installed and operate as required; that the AC/DC electrical system is operational; and that the unit will deliver electrical, hydraulic, and pneumatic power as required.

1.3 **Test Performance Sequence**

The procedures included in this ATP need not be accomplished in number sequence except where the sequence is required for safety or operational purposes.

1.4 **Test Performance Sequence**

An initial or stamp of test person next to a step indicates satisfactory (PASS) completion of that step. If unit fails any step, an (F) will be placed in that step ad the overall rating of the unit will be failed.

2.0 TEST REQUIREMENTS

2.1 **Test Specimen**

AGPU Model #: MEP-360A/D/E (circle one)	AGPU S/N:
Starting GTE Hour Meter:	Final GTE Hour Meter reading:
Starting Hydraulic Module Hour Meter:	Final Hydraulic Module Hour Meter reading:

2.1.1 AGPU complete with battery and service lines connected

2.2 **Test Equipment**

a. DC load bank, adjustable, 50, 100, 200, 350, 500, 700, and 1000 Amps at 28 VDC

b. AC load bank, adjustable, 20 KW, 40 KW, 55 KW, and 70 KW

Table 4. FINAL ACCEPTANCE TEST PROCEDURE (P/Ns MEP 83-360A/D, NSN 1730-01-144-1897 & NSN 1730-01-466-9371; P/N 1024250, NSN 1730-01-552-2313) (Continued)

c. PNEUMATIC load test stand

d. Multi-meter, capable of measuring true RMS and amperage

e. 24 VDC battery load tester

3.0 STATIC INSPECTION

3.1 **Pre-Operational Preparation**

3.1.1 Ensure that all shop paperwork is complete before testing. Review any open paperwork with the Production Manager to ensure there is no adverse affect on test results.

4.0 FUNCTIONAL OPERATION

4.1 **Fuel System**

_____ a. Fill fuel tank with approximately 65 gallons of fuel and verify fuel gauge reads approximately full.

_____ b. Inspect all tank seams and fittings for leaks. (Pass if no wetness or leaks are found.)

4.2 **Engine Start-up**

a. Verify the following:

_____ (1) Outer doors closed and latched, except where necessary to operate or perform test sequence.

_____ (2) Brake set.

_____ (3) Exhaust vent moves freely.

_____ (4) Tow bar up.

_____ (5) Ear protection worn by all in test cell.

_____ (6) Area clear of any FOD.

_____ (7) BATTERY OUTPUT SWITCH is OFF.

_____ (8) Fire extinguisher serviceable and available at unit.

_____ (9) Unit grounded to EARTH.

b. If engine has never been run (i.e., engine is new or has been remanufactured), complete the following steps:

Table 4. FINAL ACCEPTANCE TEST PROCEDURE (P/Ns MEP 83-360A/D, NSN 1730-01-144-1897 & NSN 1730-01-466-9371; P/N 1024250, NSN 1730-01-552-2313) (Continued)

CAUTION

If hydraulic pump and system has not been purged of air, **DO NOT START GTE until air is purged from all hoses and hydraulic pump.**

_____ (1) Verify the operation of the Fuel Select Valve (FCV). Place the Fuel Valve to the **INTERNAL** position (indicator points up).

_____ (2) Set AC or DC POWER switch to the ON position to prevent actual cranking of the engine.

_____ (3) Remove the flex fuel line on the AGPU side of the engine fuel control valve.

_____ (4) Connect system 24 VDC battery.

_____ (5) Set MASTER SWITCH to ON.

_____ (6) Set START switch to ON to operate the AGPU boost fuel pump.

NOTE

ENGINE SHOULD NOT CRANK. If the engine cranks, set START switch to STOP and check all previous engine preparation steps.

_____ (7) Hold START switch in RUN until fuel is present at the fuel control unit (FCU). (Use container to catch fuel; will require about 5-10 seconds of pump operating.) Place START switch to STOP.

_____ (8) Reconnect flex fuel line to FCV.

_____ (9) Remove stainless steel line from Fuel Solenoid input side.

_____ (10) Operate AGPU fuel pump as described in Steps 5 and 6, above, until fuel flows into container. Accumulate approximately 2 to 3 ounces. Flow shall be slow but consistent.

_____ (11) Replace fuel lines and tighten.

_____ (12) Ensure AGPU hydraulic reservoir selector is placed in the AGPU mode.

_____ (13) Close the high pressure bypass valve.

_____ (14) Open the hydraulic pressure gauge valve 1/4 turn.

_____ (15) Place the bypass selector to OFF.

_____ (16) Open the high pressure and return bleed valves 1-1/2 turns.

_____ (17) Turn the high pressure relief valve in (to increase pressure) approximately two full turns.

Table 4. FINAL ACCEPTANCE TEST PROCEDURE (P/Ns MEP 83-360A/D, NSN 1730-01-144-1897 & NSN 1730-01-466-9371; P/N 1024250, NSN 1730-01-552-2313) (Continued)

_____ (18) MASTER SWITCH to OFF.

WARNING

If any operation or indication appears abnormal during the following procedures, set ENGINE CONTROL switch to STOP or press EMERGENCY STOP or set MASTER SWITCH to OFF. Discontinue test until problem is resolved.

CAUTION

If hydraulic pump and system has not been purged of air, DO NOT START GTE until this operation is performed.

4.3 **Pre-Start Procedure**

_____ a. Set all toggle switches to the OFF position.

_____ b. Set MASTER SWITCH to ON.

_____ c. Depress PRESS TO TEST switch.

NOTE

All indicator lamps must illuminate. Exception: For D- and E-Models only, the DC VOLTAGE FAULT lamp does not illuminate.

_____ d. Verify the LOW FUEL PRESS light is illuminated. Verify that LOW OIL PRESS light is illuminated.

_____ e. Verify service bay and control panel lights illuminate in both bright and dim positions.

_____ f. Verify battery charger fault light is illuminated.

_____ g. For D- and E-Models, verify CURRENT LIMITER SELECTOR switch is not in the AH-64D, 90 KVA, or blank position. For A-Models, verify CURRENT LIMITER SELECTOR switch is not in the 45 KVA (AC) or 1000 Amp (DC) position. (Surge control valve closed.)

_____ h. Remove small access panel in DC cable bay to observe hydraulic pump and inspect for leakage during engine start-up.

_____ i. Secure engine access door partially open to observe engine area during engine start-up. (look for oil, fuel, or other hazards)

4.4 **Engine Start**

NOTE

Never attempt to start the unit while the engine is still operating.
Never attempt more than 3 starts in an hour.
Never allow the starter to operate for more than 30 seconds.

Table 4. FINAL ACCEPTANCE TEST PROCEDURE (P/Ns MEP 83-360A/D, NSN 1730-01-144-1897 & NSN 1730-01-466-9371; P/N 1024250, NSN 1730-01-552-2313) (Continued)

_____ a. Turn the ENGINE CONTROL switch on the Master Control Panel to the START position and hold momentarily and then release to RUN position.

_____ b. Immediately verify that hydraulic pressure increases to 450-500 psig.

_____ c. Observe STARTER CURRENT to peak at approximately 800-1000 amps and immediately fall to approximately 100 amps. Observe the GTE STARTER ON lamp (green) illuminates.

_____ d. After several seconds, the LOW FUEL PRESSURE and LOW OIL PRESSURE lights should extinguish. Shut engine off if either does not extinguish.

_____ e. When engine RPM reaches 10%, EGT should begin to rise and will peak during acceleration. Maximum EGT allowed is 1785°F for 10 seconds maximum at speeds below 60% RPM.

_____ f. When engine RPM reaches 60%, verify that the GTE STARTER ON lamp extinguishes and the STARTER CURRENT has decreased to 0.

WARNING

If exhaust appears to be a grey fog and the EGT meter does not show an increase, discontinue starting procedure and set ENGINE CONTROL switch to STOP. Do not attempt to restart until the problem is resolved.

NOTE

If engine RPM stabilizes between 60 and 95%, this indicates a hung start. Make sure STARTER CURRENT has decreased to 0. Shut off unit and repeat the engine start procedure.

_____ g. Engine RPM should reach 95% within 60 seconds and EGT should stabilize at approximately 650-700°F.

_____ h. Verify that no hydraulic or fuel leaks exist.

_____ i. Close both bleed valves at hydraulic control panel.

_____ j. Verify hydraulic pressure is at 450-500 psig.

_____ k. Observe that the BATTERY CHG/DISCH meter indicates a positive charge within 90 seconds.

_____ l. Verify that all indications (EGT, RPM, etc.) are normal.

_____ m. Verify that the exhaust ejector/engine connection does not have excessive exhaust leaks.

_____ n. Verify operation of inlet filter switch and damper by partially blocking off air inlet. Damper shall open and filter warning light shall illuminate.

Table 4. FINAL ACCEPTANCE TEST PROCEDURE (P/Ns MEP 83-360A/D, NSN 1730-01-144-1897 & NSN 1730-01-466-9371; P/N 1024250, NSN 1730-01-552-2313) (Continued)

NOTE
During engine operation, EGT readings above 1250°F should not be allowed for more than 10 seconds. Automatic or manual shutdown should be initiated.

4.4.1 **Drive Motor (Propulsion) Ramp Up and Down Operation**

NOTE
The following test will be conducted in the primary and secondary modes with engine running.

_____ a. Test the propulsion on a 12 ± 6 degree slope in forward and reverse directions.

_____ b. Remove pin in DRIVE/DISENGAGE handle, push in to the DISENGAGE position and replace the pin.

NOTE
The DO NOT TOW light on tow bar should NOT illuminate.

_____ c. Place drive switch in the OFF position.

_____ d. Shut down unit using the emergency stop switch. Engine shall immediately shut down.

4.4.2 **Shutdown (when necessary)**

_____ a. On AGPU main control panel set ENGINE CONTROL switch to STOP.

_____ b. Observe LOW FUEL PRESSURE and LOW OIL PRESSURE lights come on.

_____ c. Set MASTER SWITCH to off by closing the switch guard.

_____ d. Observe all gauges and meters on AGPU hydraulic and main control panel to assure that indicated pressures, voltages, and currents have been reduced to zero.

4.5 **Power Output Checks**

4.5.1 **Output Load Bank Connections.** Connect loads to the AGPU as follows:

4.5.1.1 **Pneumatic Load Connections**

CAUTION
Perform purge operation on pneumatic hose before connecting hose to load bank.

_____ a. Open AGPU pneumatic hose compartment door on the left-hand side.

_____ b. Remove entire length of pneumatic hose and lay it on the decking. Straighten the hose as much as possible to minimize flow restrictions, connect the aircraft connector to load test stand.

Table 4. FINAL ACCEPTANCE TEST PROCEDURE (P/Ns MEP 83-360A/D, NSN 1730-01-144-1897 & NSN 1730-01-466-9371; P/N 1024250, NSN 1730-01-552-2313) (Continued)

_____ c. Check the condition of the pneumatic hose-to-AGPU connecting point, pneumatic tubing and hose.

_____ d. Verify that the AIR FLOW CONTROL valve on the pneumatic load bank is set to closed.

4.5.1.2 **Electrical Load Connections (AC)**

_____ a. Remove all AC cable from the storage compartment.

_____ b. Check condition of the AC cable.

_____ c. Inspect cable connector for damage, contamination, and compatibility with the AC connector on the electrical load bank.

_____ d. Verify that the AC OUTPUT switch is set to OFF.

_____ e. Connect AC cable to the AC load bank.

_____ f. Set CURRENT LIMIT SELECTOR switch to AC 17 KVA.

4.5.1.3 **Electrical Load Connections (DC)**

_____ a. Remove all DC cable from the storage compartment.

_____ b. Check condition of the DC cable.

_____ c. Inspect cable connector for damage, contamination, and compatibility with the DC connector on the DC load bank.

_____ d. Verify that the DC OUTPUT switch is set to OFF.

_____ e. Connect DC cable to the DC load bank.

4.5.2 **Pneumatic System Test.** Perform pneumatic system test as follows:

CAUTION
Perform purge operation on pneumatic hose before connecting hose to load bank.

NOTE
For all steps that follow, all controls and indications are on the main AGPU control panel unless otherwise stated.

_____ a. Recheck connection of pneumatic hose at pneumatic load bank to assure that a hose release will not occur when pressure is applied. Verify that the AIR FLOW CONTROL valve on the pneumatic load bank is set to closed.

_____ b. Check the mechanical zero on the AGPU PSIG PNEUMATIC gauge (set needle to zero).

Table 4. FINAL ACCEPTANCE TEST PROCEDURE (P/Ns MEP 83-360A/D, NSN 1730-01-144-1897 & NSN 1730-01-466-9371; P/N 1024250, NSN 1730-01-552-2313) (Continued)

WARNING

Clear personnel from area around the pneumatic load bank. When pneumatic pressure is initially applied, high volume, low pressure, hot air (450°F to 600°F) and flailing hoses can cause injury.

CAUTION

If abnormal indications are observed in the following step, set the PNEUMATIC POWER switch to OFF and discontinue test until problem is corrected.

_____ c. Raise switch guard on PNEUMATIC POWER switch and set PNEUMATIC POWER switch to ON. Observe that PSIG PNEUMATIC gauge rises to approximately **40 PSIG** and that the green PNEUMATIC POWER ON light illuminates.

Record: PSIG _____ EGT _____ °F

Set surge valve to OPEN by moving the current limit selector to 45 KVA (A-Model) or 90 KVA/AH64 (D- and E-Models) position. PSIG gauge should be approximately **40 PSIG**.

Record: PSIG _____ EGT _____ °F

WARNING

Before opening pneumatic load bank AIR FLOW valve in the next step, ensure that all personnel are clear of air exhaust port.

_____ d. Set Load Bank to approximately 40 lb/min by slowly opening the load pneumatic valve to increase flow. In warmer ambient air the 40 lb/min may not be obtained. Verify that the EGT does not exceed 1250°F. Slowly open the pneumatic load bank valve and observe the AGPU EGT meter. Open the valve, slowly, until the EGT stops increasing. Record EGT reading, flow and the pressure at which the EGT stopped rising.

EGT: _____ °F Load Bank Flow: _____ AGPU Pressure: _____

Readings should be within 40 lb/min at 40 psig (seal level), temp 450°F (232°C), and 26.5 lb/min at 24 psig, 10,000 ft (3048m) altitude, temp 420°F (215°C).

_____ e. Set the PNEUMATIC POWER switch to OFF. Observe that the pneumatic hose pressure returns to 2 psig within five seconds before proceeding to the next step.

4.5.3 **AC System Check** Record Ambient Temperature _____°F

4.5.3.1 Perform AC system check as follows:

NOTE

For all steps that follow, all controls and indications are on the main AGPU control panel unless otherwise stated.

Table 4. FINAL ACCEPTANCE TEST PROCEDURE (P/Ns MEP 83-360A/D, NSN 1730-01-144-1897 & NSN 1730-01-466-9371; P/N 1024250, NSN 1730-01-552-2313) (Continued)

NOTE

The following electrical load bank settings are approximate only. Slightly different current thresholds in the various AGPU units will require slight variations of the load.

NOTE

The following load bank settings may vary ±20%.

_____ a. AGPU Running

_____ b. Set PHASE SELECT switch to A.

_____ c. Check the mechanical zero on the three AGPU AC power meters (VOLTS, HERTZ, and % LOAD).

CAUTION

If abnormal indications are observed in the following steps, set the AC POWER switch to OFF and discontinue test until problem is corrected.

d. Phase Sequence Verification

(1) Set AC POWER output switch to ON.

(2) Verify the phase rotation is clockwise, indicating direction A, B, C; reading should indicate AC output in AC volts.

(3) Set AC POWER output switch to OFF.

NOTE

If the above indications are not as specified, physically verify the generator to AC output cable wiring. Correct wiring and repeat above steps.

_____ e. Set AGPU CURRENT LIMIT SELECTOR to 45 KW (A-Model) or 90 KVA (D- and E-Models) and the AC power switch to ON. Observe normal indications on AC VOLTS and HERTZ meters:

0 indication on AC % LOAD meter.
Four red AC warning lights are extinguished.
AC POWER ON light is illuminated.

EGT: _____°F

_____ f. Read indication on AGPU AC HERTZ meter, 398 to 400+. _____Hz

_____ g. Read indication on AGPU AC VOLTS meter, 117 to 121. _____VAC

_____ h. Adjust the AC load bank to apply a load of 138 Amps per phase L1, L2, L3. Energize the load bank and verify an indication of approximately 133% on the AGPU AC% load meter on all phases. If GTE surging occurs, stop test and check operation of the surge valve. Record in test log if surge valve is activated. Record time when load is applied in step k. below.

Table 4. FINAL ACCEPTANCE TEST PROCEDURE (P/Ns MEP 83-360A/D, NSN 1730-01-144-1897 & NSN 1730-01-466-9371; P/N 1024250, NSN 1730-01-552-2313) (Continued)

_____ i. Read and record indications on AC VOLTS meter and AC HERTZ meter with AC PHASE SELECT to A.

_____AC% Load
_____Hz
_____VAC
EGT: _____°F

_____ j. Switch AC PHASE SELECT to B & C. Record voltage and hertz readings. Note: readings should remain as in step i.

_____ (1) Phase B

_____AC% Load
_____Hz
_____VAC

_____ (2) Phase C

_____AC% Load
_____Hz
_____VAC

_____ k. Run system at 138 amps for 30 minutes.

System on (time of day): _____
EGT: _____°F
System off (time of day): _____

_____ l. Set load bank to off.

_____ m. Set AGPU AC POWER SWITCH to RESET and return to OFF.

_____ n. Set AGPU CURRENT LIMIT SELECTOR and load bank in accordance with the following table. Run system at load specified for 5 minutes at each step.

NOTE
After each load test, set load bank to off and set AGPU AC POWER SWITCH to RESET and return to OFF.

AGPU CURRENT LIMIT SELECTOR: A-Model / D- and E-Models	SET LOAD BANK: A-Model / D- and E-Models	AC% Load: All Models	VAC @ Phase A All Models
10 KW/ 17 KVA	10 KW/ 15 KW	(25%)	(117 to 120)
20 KW/ 38 KVA	20 KW/ 30 KW	(50%)	(117 to 120)
30 KW/ 59 KVA	30 KW/ 45 KW	(75%)	(117 to 120)
/ 90 KVA	/ 70 KW	(133+%)	(117 to 120)

4.5.3.2 **Surge Valve Operation.**

_____ a. Place Surge valve switch to off position by moving the current selector to 10 KVA (A-Model) or 17 KVA (D- and E-Models).

Table 4. FINAL ACCEPTANCE TEST PROCEDURE (P/Ns MEP 83-360A/D, NSN 1730-01-144-1897 & NSN 1730-01-466-9371; P/N 1024250, NSN 1730-01-552-2313) (Continued)

_____ b. Record EGT reading.EGT: _____°F

_____ c. Place Surge valve switch in on position. (45 KVA for A-Model; 90 KVA for D- and E-Models)

_____ d. Record EGT reading. EGT: _____°F

NOTE

EGT should rise 75-200 degrees (°F) and sound level should increase when the surge valve switch is activated. The EGT should also decrease the same amount when the switch is turned off. Note: If desired results are not observed, stop and check pneumatic system and new muffler on D- and E-models.

4.5.3.3 **Model MEP-360A AC Current Limit Test.**

_____ a. Set AGPU CURRENT LIMIT SELECTOR to 45 KW and the AC power switch to on.

_____ b. On the electrical load bank, set LOAD SWITCH to ON. Adjust load bank for 133% on the AGPU AC % LOAD meter (45 KW, 138 Amps).

Record EGT reading. EGT: _____°F

Check that load meter on AGPU indicates 133% load _____AC % Load

_____ c. After 30 seconds, set the load bank to 55 KW. Within 4 to 7 seconds, the OVER CURRENT lamp will illuminate, the AGPU AC contactor will open, the UNDER VOLTAGE lamp will illuminate, and the AC POWER ON lamp will go out. Record the time taken for the AC POWER ON lamp to go out after the OVER CURRENT lamp illuminates.

TIME: _____ sec

_____ d. Set load bank to off. Set AGPU AC POWER SWITCH to RESET and return to OFF.

4.5.3.4 **Model MEP-360D/E AC Current Limit Test.**

_____ a. Set AGPU CURRENT LIMIT SELECTOR to AH-64D (90 KVA) and the AC power switch to on.

_____ b. On the electrical load bank, set LOAD SWITCH to ON. Set the load bank to 75 KW. Hold for 5 seconds.

Record EGT reading. EGT: _____°F

Check that load meter on AGPU indicates 133% load _____AC % Load

_____ c. Set the load bank to 75 KW. After 30 seconds, the OVER CURRENT lamp will illuminate followed by a 45-second delay before the UNDER VOLTAGE lamp illuminates and the AC POWER ON lamp goes out. Record the time taken for the UNDER VOLTAGE lamp to illuminate after the OVER CURRENT lamp illuminates.

TIME: _____ sec

_____ d. Set load bank to off. Set AGPU AC POWER SWITCH to RESET and return to OFF.

Table 4. FINAL ACCEPTANCE TEST PROCEDURE (P/Ns MEP 83-360A/D, NSN 1730-01-144-1897 & NSN 1730-01-466-9371; P/N 1024250, NSN 1730-01-552-2313) (Continued)

4.5.4 **Battery Charger Test**

_____ a. Verify that the 50 amp 28 VDC load is connected to the slave receptacle.

_____ b. Disconnect the AGPU on-board battery.

_____ c. Apply 50 amps load. Verify that the battery voltage gauge is in the green and the charging amps is indicating +50. Apply load for one minute, then deactivate load; turn off AGPU and Battery switch. Reconnect the AGPU on-board battery and restart the AGPU GTE.

4.5.5 **DC System Check**

4.5.5.1 Verify that the BATTERY OUTPUT is OFF.

4.5.5.2 Set DC POWER switch to ON. Verify reading on DC VOLTS meter on the DC load bank is less than 30 VDC.

4.5.5.3 Set load bank to 100 Amps. Record reading from DC meter (it should be 100 Amps)

_____Amps

4.5.5.4 Set load bank to 350 Amps. Record reading from DC meter (it should be 350 Amps)

_____Amps

4.5.5.5 Run system at 350 DC Amps load for 30 minutes. Check that cooling fans are running on the TRU and note if air flow is not felt from unit. **Stop the load test if airflow is not felt.**

4.5.6 **Hydraulic System Test.** Perform hydraulic system test as follows. Connect the 10’ and 30’ hydraulic hoses and the Dual Service Manifold as required.

NOTE

For all steps that follow, all controls and indications are on the AGPU hydraulic control panel unless otherwise stated.

_____ a. Recheck connection of hydraulic hoses at hydraulic load bank to assure that hose release will not occur when pressure is applied. Ensure the load bank FLOW CONTROL valve is closed.

WARNING

Clear area around the hydraulic load bank of all personnel when hydraulic pressure is initially applied. High pressure fluid and flailing hoses can cause injury.

CAUTION

If abnormal indications are observed in the following steps, set the MAIN POWER switch to OFF and open load bank FLOW CONTROL valve to release pressure. Discontinue test until problem is corrected.

Table 4. FINAL ACCEPTANCE TEST PROCEDURE (P/Ns MEP 83-360A/D, NSN 1730-01-144-1897 & NSN 1730-01-466-9371; P/N 1024250, NSN 1730-01-552-2313) (Continued)

_____ b. Set MAIN POWER switch to ON. Observe that HYDRAULIC OUTPUT PRESSURE gauge reads 450-600 psig. Push TEST LIGHTS switch on hydraulic control panel to see if all hydraulic control panel lights illuminate.

_____ c. Open HIGH PRESS BLEED and RETURN BLEED and wait until red mist in viewing ports turns dark, indicating that the air is out of the lines, then close.

_____ d. Verify the hydraulic load bank flow valve is set to its lowest limit.

_____ e. Set hydraulic OUTPUT switch to ON.

_____ f. Set the HYDRAULIC MODULE PRESSURE switch to increase until the hydraulic module pressure gauge reads 3200 psig. If pressure will not rise to 3200 psig, review high pressure relief valve setting.

Indicated hydraulic load bank pressure: _____psig

AGPU hydraulic module pressure gauge pressure: _____psig

NOTE

If pressure will not increase, adjust the relief valve to a higher setting.

_____ g. Check the High Pressure bypass function of the unit as follows:

(1) Slowly open the high pressure bypass valve while observing the hydraulic pressure gauge. Open the valve until the gauge indicates a pressure drop of 150-200 psig.

(2) Close the high pressure bypass valve and observe the pressure returns to the previously set value.

_____ h. Set the pump pressure switch to increase until the hydraulic output pressure gauge reads approximately 3500 psig. Adjust the relief valve if necessary.

_____ i. On the hydraulic load bank, adjust the flow control valve to attain an indication of 15.2 GPM flow on the load bank's flow meter.

_____ j. Record readings. Adjust the AGPU and load bank to achieve 15.2 GPM at 3300 psig indicated on the load bank.

Pressure at AGPU: _____psig

Pressure at load bank: _____psig

Flow at load bank: _____GPM

Table 4. FINAL ACCEPTANCE TEST PROCEDURE (P/Ns MEP 83-360A/D, NSN 1730-01-144-1897 & NSN 1730-01-466-9371; P/N 1024250, NSN 1730-01-552-2313) (Continued)

4.5.7 **Operation at Rated Loads**

_____ a. Adjust the load banks as necessary to obtain the following loads and operate **for 5 minutes**:

Condition:
Set AC power output to 45 KVA (A-Model) or 90 KVA (D- and E-Models)
Set AC load bank at 30 KW (A-Model) or 45 KW (D- and E-Models)
Set Hydraulic output power at 6.5 GPM, 3000 psig at AGPU and load bank
Turn on Pneumatic power; should flow at approximately 30 lb/min (at 40 psig)

Test Start time: _____
AC Volts _____
Pneumatic PSIG _____
Hyd. Flow: _____gpm
Hydraulic pressure _____psig
EGT: _____°F
Test Stop time: _____

_____ b. De-energize AC load bank and turn pneumatic power to off.

_____ c. Set hydraulic OUTPUT switch to OFF and set PUMP PRESS switch to DEC (decrease) until hydraulic output pressure gauge reads approximately 500 psig, or will go no lower. Set hydraulic OUTPUT switch to OFF.

NOTE
When Hydraulic System power switch is turned to the off position, pressure should start to drop.

_____ d. Set hydraulic control panel MAIN POWER switch to OFF and close switch guard.

NOTE
Pressure will still indicate approximately 500 psig.

4.5.8 **Operation at Rated Loads**

_____ a. Adjust the load banks as necessary to obtain the following loads and operate **for 30 minutes**:

Table 4. FINAL ACCEPTANCE TEST PROCEDURE (P/Ns MEP 83-360A/D, NSN 1730-01-144-1897 & NSN 1730-01-466-9371; P/N 1024250, NSN 1730-01-552-2313) (Continued)

Condition:
Set AC power output to 27 KVA (A-Model) or 59 KVA (D- and E-Models)
Set AC load bank at 30 KW (A-Model) or 45 KW (D- and E-Models)
Set DC power output to 700 Amps (A-Model) and set output to ON.
Set DC load bank to 700 Amps (A-Model) or 350 Amps (D- and E-Models).

Test Start time: _____
AC Volts _____
AC Amps _____ amps
DC Volts _____
DC Amps _____ amps
EGT: _____°F
Test Stop time: _____

_____ b. De-energize load banks; turn off AC and DC outputs.

4.5.9 **AC Outlet Tests: 400 Hz and Inverter 60 Hz, all models.**

NOTE
Performed with engine running.

_____ a. Ensure all service receptacle circuit breakers are closed.

_____ b. Place AC POWER switch to ON.

_____ c. Verify the 400 Hz AC voltage at each of the 4 AC outlets. Measure and record the AC voltage with a suitable voltage meter.
_____VAC

_____ d. Turn on DC output switch. Test the AC output at the DC/AC inverter; verify that 110 VAC are obtained at 60 Hz outlets. _____VAC

4.5.10 **Battery Charger/Battery Charger Selector Switch Test**

_____ a. Set Battery charger selector switch to the following positions. Observe and record voltages as read on the AGPU BATTERY meter.

Selector Position	Specification Voltage	Actual Voltage
28.5 VDC	26 to 31 VDC	_____
30.5 VDC	28 to 33 VDC	_____
32.5 VDC	29.5 to 34.5 VDC	_____

_____ b. Set battery charger selector switch to 28.5 VDC.

4.5.11 **Battery Charger/Circuit Breaker Test**

_____ a. Open 35A circuit breaker and verify the CHGR/BATT fault light illuminates and the engine does not shut down. Close 35A circuit breaker.

Table 4. FINAL ACCEPTANCE TEST PROCEDURE (P/Ns MEP 83-360A/D, NSN 1730-01-144-1897 & NSN 1730-01-466-9371; P/N 1024250, NSN 1730-01-552-2313) (Continued)

____ b. Shut down AGPU as described in paragraph 4.4.2.

5.0 **POST TEST**

5.1 **System Shutdown**

_____ a. Read and record the engine time and hydraulic hour meters and the number of starts during the test. Transfer the data to the Equipment/Engine log book.

_____ b. Disconnect all hoses Stow all hoses and cables.

_____ c. Remove the roof and check the torque an all 1.0- and 2.5-inch hose clamps. Torque to 60-inch pounds. Reinstall the roof.

_____ d. Disconnect large battery cable quick disconnect, but do not disconnect the tow alarm connector P-1 and J-1.

ACCEPTANCE TEST COMPLETED

AGPU SERIAL NO. _____ GTE HOURS_____ HYD HOURS_____

Performed by: _____ Date: _____
Stamp

Accepted by: _____ Date: _____
Stamp

AGPU Passed: _____ AGPU Failed: _____

6.0 **QUALITY ASSURANCE (QA)**

6.1 **QA In-Process Inspections**

Performed by: _____ Date: _____
Stamp

6.2 **QA Final Inspections**

Performed by: _____ Date: _____
Stamp

Table 4. FINAL ACCEPTANCE TEST PROCEDURE (P/Ns MEP 83-360A/D, NSN 1730-01-144-1897 & NSN 1730-01-466-9371; P/N 1024250, NSN 1730-01-552-2313) (Continued)

LETTERKENNY army DEPOT
FT.BRAGG AOAP RESULTS
UIC WOL646

DETAILED REPORT / AVAILABLE ON LOGSA WEBSITE WWW.LOGSA.ARMY.MIL

AGPU SER.NO. _____ SAMPLE

DATE

ENGINE SER.NO. P-_____ RESULTS NORMAL ☐ _____

QC STAMP

HYD.MODULE NO. _____ RESULTS NORMAL ☐ _____

QC STAMP

15. DA FORM 2404, EQUIPMENT INSPECTION, AND MAINTENANCE WORKSHEET.

EQUIPMENT INSPECTION AND MAINTENANCE WORKSHEET

For use of this form, see DA PAM 738-750 and 738-751; the proponent agency is DCSLOG

1. ORGANIZATION					2. NOMENCLATURE AND MODEL	
3. REGISTRATION/SERIAL/NSN	4a. MILES	b. HOURS	c. ROUNDS FIRED	d. HOT STARTS	5. DATE	6. TYPE INSPECTION

7. APPLICABLE REFERENCE			
TM NUMBER	TM DATE	TM NUMBER	TM DATE

COLUMN a – Enter TM item number.

COLUMN b – Enter the applicable condition status symbol.

COLUMN c – Enter deficiencies and shortcomings.

COLUMN d – Show corrective action for deficiency or shortcoming listed in Column c.

COLUMN e – Individual ascertaining completed corrective action initial in this column.

STATUS SYMBOLS

"X" – Indicates a deficiency in the equipment that places it in an inoperable status.

CIRCLED "X" – Indicates a deficiency, however, the equipment may be operated under specific limitations as directed by higher authority or as prescribed locally, until corrective action can be accomplished.

HORIZONTAL DASH "(-)" – Indicates that a required inspection, component replacement, maintenance operation check, or test flight is due but has not been accomplished, or an overdue MWO has not been accomplished.

DIAGONAL "(/)" – Indicates a material defect other than a deficiency which must be corrected to increase efficiency or to make the item completely serviceable.

LAST NAME INITIAL IN BLACK, BLUE-BLACK INK, OR PENCIL - Indicates that a completely satisfactory condition exists.

FOR AIRCRAFT - Status symbols will be recorded in red.

ALL INSPECTIONS AND EQUIPMENT CONDITIONS RECORDED ON THIS FORM HAVE BEEN DETERMINED IN ACCORDANCE WITH DIAGNOSTIC PROCEDURES AND STANDARDS IN THE TM CITED HEREON.

8a. SIGNATURE *(Person(s) performing inspection)*	8b. TIME	9a. SIGNATURE *(Maintenance Supervisor)*	9b. TIME	10. MANHOURS REQUIRED

TM ITEM NO. *a*	STATUS *b*	DEFICIENCIES AND SHORTCOMINGS *c*	CORRECTIVE ACTION *d*	INITIAL WHEN CORRECTED *e*

DA FORM 2404, APR 79 Replaces edition of 1 Jan 64, which will be used USAPPC V1.10

TM ITEM NO. *a*	STATUS *b*	DEFICIENCIES AND SHORTCOMINGS *c*	CORRECTIVE ACTION *d*	INITIAL WHEN CORRECTED *e*

USAPPC V1.10

16. POINTS OF CONTACT (POC).

a. PM AGSE POC is MAJ Chris Enderton, SFAE-AV-AS-AG, DSN 788-0017, commercial (256) 842-0017, e-mail christopher.enderton@us.army.mil.

b. Logistics POC is Mr. Ed Cholewa, AMSAM-MMC-AV-SA, DSN 897-1575, commercial (256) 313-1575, e-mail cholewaem@redstone.army.mil.

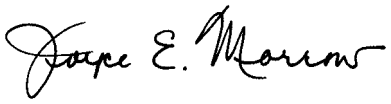
c. Engineering POC is Mr. Mike Davis, SFAE-AV-AS-AG, DSN 645-0227 or commercial (256) 955-0227, e-mail mikedavis14@us.army.mil.

17. REPORTING OF ERRORS AND RECOMMENDED IMPROVEMENTS. You can help improve this bulletin. If you find mistakes or know of a way to improve procedures, please let us know. Mail your letter or DA Form 2028 (Recommended Changes to Publications and Blank Forms), directly to: Commander, U.S. Army Aviation and Missile Command, ATTN: AMSAM-MMC-MA-NP, Redstone Arsenal, Al 35898-5000. A reply will be furnished to you. You may also provide DA Form 2028 information to AMCOM via e-mail, fax, or the World Wide Web. Our fax number is: DSN 788-6546 or Commercial (256) 842-6546. Our e-mail address is: 2028@redstone.army.mil. Instructions for sending an electronic 2028 may be found at the back of this bulletin. For the World Wide Web, use: https://amcom2028.redstone.army.mil.

By Order of the Secretary of the Army

GEORGE W. CASEY, JR.
General, United States Army
Chief of Staff

Official:



JOYCE E. MORROW
Administrative Assistant to the
Secretary of the Army
0801401

DISTRIBUTION:
To be distributed in accordance with the Initial Distribution Number (IDN) 314103, requirements for TB 1-1730-229-30-3.

These are the instructions for sending an electronic 2028

The following format must be used if submitting an electronic 2028. The subject line must be exactly the same and all fields must be included; however only the following fields are mandatory: 1, 3, 4, 5, 6, 7, 8, 9, 10, 13, 15, 16, 17, and 27.

From: “Whomever” whomever@wherever.army.mil
To: 2028@redstone.army.mil

Subject: DA Form 2028

1 ***From: Joe Smith***
2 *Unit: home*
3 ***Address: 4300 Park***
4 ***City***: Hometown
5 ***St: MO***
6 ***Zip: 77777***
7 ***Date Sent***: 19--OCT--93
8 ***Pub no***: 55--2840--229--23
9 ***Pub Title: TM***
10 ***Publication Date***: 04--JUL--85
11 *Change Number*: 7
12 *Submitter Rank*: MSG
13 ***Submitter FName***: Joe
14 *Submitter MName*: T
15 ***Submitter LName***: Smith
16 ***Submitter Phone***: 123--123--1234
17 ***Problem: 1***
18 *Page: 2*
19 *Paragraph: 3*
20 *Line: 4*
21 *NSN: 5*
22 *Reference: 6*
23 *Figure: 7*
24 *Table: 8*
25 *Item: 9*
26 *Total: 123*

27 ***Text***:
This is the text for the problem below line 27.

RECOMMENDED CHANGES TO PUBLICATIONS AND BLANK FORMS

For use of this form, see AR 25--30; the proponent agency is ODISC4.

Use Part II (*reverse*) for Repair Parts and Special Tool Lists (RPSTL) and Supply Catalogs/ Supply Manuals (SC/SM)

DATE
8/30/02

TO: (*Forward to proponent of publication or form)(Include ZIP Code*)
Commander, U.S. Army Aviation and Missile Command
ATTN: AMSAM--MMC--MA--NP
Redstone Arsenal, AL 35898

FROM: (*Activity and location)(Include ZIP Code*)
MSG, Jane Q. Doe
1234 Any Street
Nowhere Town, AL 34565

PART 1 - ALL PUBLICATIONS (EXCEPT RPSTL AND SC/SM) AND BLANK FORMS

PUBLICATION/FORM NUMBER	DATE	TITLE
TM 9-1005-433-24	16 Sep 2002	Organizational, Direct Support, And General Support Maintenance Manual for Machine Gun, .50 Caliber M3P and M3P Machine Gun Electrical Test Set Used On Avenger Air Defense Weapon System

ITEM NO.	PAGE NO.	PARA-GRAPH	LINE NO. *	FIGURE NO.	TABLE NO.	RECOMMENDED CHANGES AND REASON
1	WP0005 PG 3		2			Test or Corrective Action column should identify a different WP number.

* *Reference to line numbers within the paragraph or subparagraph.*

TYPED NAME, GRADE OR TITLE	TELEPHONE EXCHANGE/ AUTOVON, PLUS EXTENSION	SIGNATURE
MSG, Jane Q. Doe, SFC	788-1234	

TO: (Forward direct to addressee listed in publication)	FROM: (Activity and location) (Include ZIP Code)	DATE
Commander, U.S. Army Aviation and Missile Command ATTN: AMSAM-MMC-MA-NP Redstone Arsenal, AL 35898	MSG, Jane Q. Doe 1234 Any Street Nowhere Town, AL 34565	8/30/02

PART II - REPAIR PARTS AND SPECIAL TOOL LISTS AND SUPPLY CATALOGS/SUPPLY MANUALS

PUBLICATION NUMBER	DATE	TITLE

PAGE NO.	COLM NO.	LINE NO.	NATIONAL STOCK NUMBER	REFERENCE NO.	FIGURE NO.	ITEM NO.	TOTAL NO. OF MAJOR ITEMS SUPPORTED	RECOMMENDED ACTION

PART III - REMARKS (*Any general remarks or recommendations or suggestions for improvement of publications and blank forms. Additional blank sheets may be used if more space is needed.*)

TYPED NAME, GRADE OR TITLE	TELEPHONE EXCHANGE/AUTOVON, PLUS EXTENSION	SIGNATURE
MSG, Jane Q. Doe, SFC	788-1234	

USAPA V3.01

RECOMMENDED CHANGES TO PUBLICATIONS AND BLANK FORMS **For use of this form, see AR 25--30; the proponent agency is ODISC4.**	Use PartII(*reverse*) for Repair Parts and Special Tool Lists (RPSTL) and Supply Catalogs/ Supply Manuals (SC/SM)	DATE
TO*: (Forward to proponent of publication or form)(Include ZIP Code)* Commander, U.S. Army Aviation and Missile Command ATTN: AMSAM-MMC-MA-NP Redstone Arsenal, AL 35898	FROM*: (Activity and location)(Include ZIP Code)*	

PART 1 --ALL PUBLICATIONS (EXCEPT RPSTL AND SC/SM) AND BLANK FORMS

PUBLICATION/FORM NUMBER	DATE	TITLE

ITEM NO.	PAGE NO.	PARA-GRAPH	LINE NO. *	FIGURE NO.	TABLE NO.	RECOMMENDED CHANGES AND REASON

* *Reference to line numbers within the paragraph or subparagraph.*

TYPED NAME, GRADE OR TITLE	TELEPHONE EXCHANGE/ AUTOVON, PLUS EXTENSION	SIGNATURE

T**O:** *(Forward direct to addressee listed in publication)* Commander, U.S. Army Aviation and Missile Command ATTN: AMSAM-MMC-MA-NP Redstone Arsenal, AL 35898	**FROM:** *(Activity and location) (Include ZIP Code)*	**DATE**

PART II --REPAIR PARTS AND SPECIAL TOOL LISTS AND SUPPLY CATALOGS/SUPPLY MANUALS

PUBLICATION NUMBER	DATE	TITLE

PAGE NO.	COLM NO.	LINE NO.	NATIONAL STOCK NUMBER	REFERENCE NO.	FIGURE NO.	ITEM NO.	TOTAL NO. OF MAJOR ITEMS SUPPORTED	RECOMMENDED ACTION

PART **II**I **--REMARK**S *(Any general remarks or recommendations, or suggestions for improvement of publications and blank forms. Additional blank sheets may be used if more space is needed.)*

TYPED NAME, GRADE OR TITLE	TELEPHONE EXCHANGE/AUTOVON, PLUS EXTENSION	SIGNATURE

The Metric System and Equivalents

Linear Measure

1 centimeter = 10 millimeters = .39 inch
1 decimeter = 10 centimeters = 3.94 inches
1 meter = 10 decimeters = 39.37 inches
1 dekameter = 10 meters = 32.8 feet
1 hectometer = 10 dekameters = 328.08 feet
1 kilometer = 10 hectometers = 3,280.8 feet

Weights

1 centigram = 10 milligrams = .15 grain
1 decigram = 10 centigrams = 1.54 grains
1 gram = 10 decigram = .035 ounce
1 decagram = 10 grams = .35 ounce
1 hectogram = 10 decagrams = 3.52 ounces
1 kilogram = 10 hectograms = 2.2 pounds
1 quintal = 100 kilograms = 220.46 pounds
1 metric ton = 10 quintals = 1.1 short tons

Liquid Measure

1 centiliter = 10 milliters = .34 fl. ounce
1 deciliter = 10 centiliters = 3.38 fl. ounces
1 liter = 10 deciliters = 33.81 fl. ounces
1 dekaliter = 10 liters = 2.64 gallons
1 hectoliter = 10 dekaliters = 26.42 gallons
1 kiloliter = 10 hectoliters = 264.18 gallons

Square Measure

1 sq. centimeter = 100 sq. millimeters = .155 sq. inch
1 sq. decimeter = 100 sq. centimeters = 15.5 sq. inches
1 sq. meter (centare) = 100 sq. decimeters = 10.76 sq. feet
1 sq. dekameter (are) = 100 sq. meters = 1,076.4 sq. feet
1 sq. hectometer (hectare) = 100 sq. dekameters = 2.47 acres
1 sq. kilometer = 100 sq. hectometers = .386 sq. mile

Cubic Measure

1 cu. centimeter = 1000 cu. millimeters = .06 cu. inch
1 cu. decimeter = 1000 cu. centimeters = 61.02 cu. inches
1 cu. meter = 1000 cu. decimeters = 35.31 cu. feet

Approximate Conversion Factors

To change	*To*	*Multiply by*	*To change*	*To*	*Multiply by*
inches	centimeters	2.540	ounce-inches	Newton-meters	.007062
feet	meters	.305	centimeters	inches	.394
yards	meters	.914	meters	feet	3.280
miles	kilometers	1.609	meters	yards	1.094
square inches	square centimeters	6.451	kilometers	miles	.621
square feet	square meters	.093	square centimeters	square inches	.155
square yards	square meters	.836	square meters	square feet	10.764
square miles	square kilometers	2.590	square meters	square yards	1.196
acres	square hectometers	.405	square kilometers	square miles	.386
cubic feet	cubic meters	.028	square hectometers	acres	2.471
cubic yards	cubic meters	.765	cubic meters	cubic feet	35.315
fluid ounces	milliliters	29,573	cubic meters	cubic yards	1.308
pints	liters	.473	milliliters	fluid ounces	.034
quarts	liters	.946	liters	pints	2.113
gallons	liters	3.785	liters	quarts	1.057
ounces	grams	28.349	liters	gallons	.264
pounds	kilograms	.454	grams	ounces	.035
short tons	metric tons	.907	kilograms	pounds	2.205
pound-feet	Newton-meters	1.356	metric tons	short tons	1.102
pound-inches	Newton-meters	.11296			

Temperature (Exact)

°F	Fahrenheit temperature	5/9 (after subtracting 32)	Celsius temperature	°C