URGENT

DEPARTMENT OF THE ARMY TECHNICAL BULLETIN

Inspection and Repair of
Aviation Ground Power Unit (AGPU)

Part Number 83-360A, NSN 1730-01-144-1897
Part Number 83-360D, NSN 1730-01-466-9371

Headquarters, Department of the Army, Washington D. C.
16 February 2005

NOTE

THIS PUBLICATION IS EFFECTIVE UNTIL RECINDED OR SUPERSEDED.

1. PURPOSE. The purpose of this TB is to inspect all Aviation Ground Power Units (AGPU) returning from Operation Enduring Freedom/Iraqi Freedom (EF/IF) to determine the need for repair, to incorporate corrections to reported operational problems and approved configuration changes.

2. PRIORITY CLASSIFICATION. URGENT**.**

3. SUMMARY OF PROBLEM.

a. Operations in EF/IF may have caused serious deterioration to the AGPU's engine and other systems.

b. Several operational problems, such as, malfunctioning emergency shutdown switch and bent towbars 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.

d. Not all AGPU's supporting the AH-64D at Aviation Intermediate Maintenance (AVIM) levels and above, have been upgraded to the "D model" AGPU.

4. INSPECTION PROCEDURES.

NOTE

The following checks are to be performed after incorporation of identified corrections or component changes.

a. **AGPU.**

(1) Make sure AGPU is free of tools, equipment, and fluid leaks (fuel, engine oil, and hydraulic fluid), dirt and corrosion. (Not an inspection).) (See TM 1-1500-344-23, Chapter 4, Inspection and Corrosion Prone Areas.)

* This TB supersedes TB 1-1730-229-30-3, dated 12 September 2003.

(2) Check that parking brake is set (lowered). Check that clutch lever is disengaged and quick-release pin is installed.

b. **EXHAUST.**

Inspect exhaust installation in accordance with TB 1-1730-229-30-1.

c. **GROUNDING.**

(1) Inspect ground stud for secure mounting.

(2) Check that AGPU is properly grounded.

d. **FRAME AND HOUSING.**

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

(2) Check that four lifting eyes are in place and not damaged.

(3) Inspect access doors for damage, and ensure that latches and hinges operate properly.

(4) Inspect acoustic insulation panels for excessive accumulation of sand.

e. **CONTROL PANEL.**

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

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

f. **BATTERY.**

(1) Inspect battery compartment, battery, and battery hold-down and guide for damage or corrosion.. Check that vent and drain tubes are in place, and hold downs are tight.

(2) Ensure that battery cables and connectors are checked per paragraph 3-8, TM 55-1730-229-12.

(3) Check that 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) Check for proper lubricating oil level, add as required (refer to L.O.).

(2) Inspect interior of engine compartment for damage, signs of fuel or oil leaks, dirt, and corrosion. (Not an inspection.)

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

(4) Check that drain tubes are connected to engine drain valves, fuel control unit, and hydraulic pump.

(5) Check that bolts on engine mounts are secure, and lockwired. Check that bolts on generator support are secure and lockwired.

(6) Inspect hour meter for damage, and security of installation.

(7) Inspect start assembly to ensure power cables are secure.

(8) Inspect hydraulic hoses for cuts and splits, inspect fittings for damage and freedom of dirt and corrosion.

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

h. **HYDRAULIC MODULE.**

(1) Check that all hoses manifold ports and hoses ends are protected with metal dust caps or plugs.

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

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

(4) Remove protective caps and inspect hydraulic fittings for gouges, cracks, or corrosion.

(5) Inspect hydraulic filter housing assembly, filter head indicator, and wiring for cracks, damage and leaks.

(6) Inspect vent dryer desiccant (25% of the canister should have desiccant that has blue indication.)

i. **AC AND DC POWER CABLES.**

(1) Inspect cables for damage to insulation.

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

j. **PNEUMATIC HOSE.**

Check that hose clamp on internal and output hoses are secure, inspect hoses for split or cuts, and inspect connector fitting for damage and freedom from dirt and corrosion.

k. **PROPULSION SYSTEM.**

(1) Inspect front axle assembly for bent or broken components, loose or missing components, and leakage of lubricant.

(2) Inspect tires and wheels for condition (excessive wear, cuts, or foreign objects). Inspect wheels for missing lug nuts.

(3) Inspect tow bar speed/direction control assembly for damage and loose or missing components, and dented housing.

(4) Inspect brake cable assembly for broken strands, missing or loose fasteners, and improper operation.

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

(6) Inspect springs for bent or broken spring leaves, and missing or loose components.

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

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

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

(10) Inspect electric brake housing for damage; damage or distortion of strain relief connector and missing or loose fasteners. Prepare AGPU propulsion system for operation in the Alternate Propulsion Mode and check electric brake for operation.

l. **ELECTRICAL CHECKS.**

NOTE

Set control panel MASTER switch to ON, and perform following checks:

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

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

(3) Check reading on FUEL gauge, add fuel as required.

(4) On hydraulic control panel, push PRESS TO TEST LIGHTS and check that all indicator lights illuminate.

(5) Set MASTER SWITCH to off.

m. **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 500 psig.

(2) EGT meter reads in yellow band. Action - Remove or reduce load.

(3) LOW FUEL indicator illuminated Action - Shutdown and refuel unless operations can be completed in 30 minutes.

(4) INLET FILTER BLOCKED indicator illuminated Action - Shutdown and determine cause of problem, check air intake louvered panel for obstructions.

(5) COMPT/GEN HI TEMP indicator illuminated. Action - Remove or reduce load.

(6) Fault indicator illuminated. Action - If automatic shutdown occurs, record lamp indications prior to setting MASTER SWITCH to OFF.

(7) Hydraulic control panel red HI TEMP indicator illuminated. Action - Remove or reduce hydraulic load.

NOTE

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

(8) Store hydraulic hoses on rack on back of engine access door. Wipe hoses clean and install protective caps prior to storage.

(9) Store AC and DC power cables in storage bins. Wipe cables clean prior to storage.

(10) Carefully store pneumatic hose in storage bin. Check that butterfly shutter inside fitting is clean and closed.

(11) Fill fuel tank to prevent water condensation.

5. APPLICATION.

This TB shall be applied to all AGPUs returning from Operation Enduring Freedom/ Iraqi Freedom.

6. CORRECTION PROCEDURES.

The AGPU flame, housing, propulsion system, and engine should be cleaned, and all corrosion removed IAW paragraph 2-6 and 2-6, TM 55-1730-229-34, and TM 1-1500-344-23, Chapter 5, Corrosion Remove and Surface treatment.

a. **EXHAUST.**

If the exhaust plenum is leaking, any of the ejector tubes are missing, engine stall has been reported, the exhaust plenum has to be removed for any reason, or if improved engine performance is desired, replace the exhaust in accordance with TB 1-1730-229-30-1.

b. **FRAME AND HOUSING.**

(1) Install lifting rings at the top corners of the AGPU cover.

(2) Replace acoustic insulation panels with excessive accumulation of sand.

(3) Paint IAW paragraph 2-5.d, TM 55-1730-229-34, except the finish paint shall be desert tan.

c. **ENGINE.**

NOTE

The following procedures require a 75 KW AC load bank, NSN 6150-01-305-8867-8, Cannon Load Banks, Inc., P/N L-75AF or equivalent. Refer to MWO 1-1730-229-50-2 for details on operation of this load bank.

(1) All “D 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 overhaul the engine..

(2) 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, to determine the need to overhaul the engine..

CAUTION

If engine 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 to ON.

(f) Increase system pressure to 3300 psi.

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

(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 load bank to OFF.

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

(l) Allow load bank to cool.

(m) Set AC POWER switch to OFF.

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

e. **HYDRAULIC MODULE.**

(1) Perform AGPU Hydraulic System recommended self-filtering and purging operation. Ref. Paragraph 3-10, TM 55-1730-229-12. **DURING and AFTER CHECK.**

(2) Ensure that all AGPUs not manufactured by EASI have the drain holes in the bottom pan welded shut to prevent hydraulic leakage.

f. **PROPULSION SYSTEM.** Repair and reinforce bent tongue and drawbar as follows:

(1) After straightening the tongue, weld a plate between the upper channel and lower flange from the drawbar attachment back to the stops. (This will greatly increase the torsional strength of the tongue).

(2) Weld an insert into the existing slot to increase the height of the back of the slot and to move it forward. (The higher back will prevent the raised latch from clearing the slot). By moving the slot forward, additional clearance is provided to accommodate wear on king pin and other parts of the running gear. This modification is intended to prevent the drawbar in the raised position from hitting the front panel of the AGPU and damaging the dead man switch.

(3) After repair of damage from the towing (backing) vehicle contacting the side flange of the drawbar just behind the lunette eye, weld a plate in the damaged area connecting the two bottoms of the side flanges.

g. **ELECTRICAL.**

(1) Per direction of the Product Management Office (PMO), Aviation Ground Support Equipment (AGSE), apply MWO 1-1730-229-50-2 (“D model” upgrade) to selected AGPUs.

(2) Relocate the existing emergency shutdown switch from its current position which extends into the engine/generator compartment to the AC cable bay. Position the switch centered and approximately 4 inches below the bottom of the roof latch mounting plate. Cover the switch with heat shrink tubing when reinstalling.

(3) Replace all 60 Hz inverter with Prowatt 800 IAW TB 1-1730-229-20.

7. SUPPLY/PARTS AND DISPOSITION. N/A

8. POINTS OF CONTACT (POC).

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