

## DEPARTMENT OF THE ARMY TECHNICAL BULLETIN

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### Inspection and Replacement of Exhaust Installation

#### Aviation Ground Power Unit (AGPU)

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

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

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Headquarters, Department of the Army, Washington D. C.  
16 July 2003

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#### NOTE

THIS PUBLICATION IS EFFECTIVE UNTIL RESCINDED OR SUPERSEDED.

**1. PURPOSE.** The purpose of this TB is to identify AGPUs that have leaking or defective exhaust ejector assemblies and to authorize replacement of the original and modified ejector and inlet tube assemblies with a new improved performance exhaust deflector installation. The new installation further reduces the gas turbine engine (GTE) exhaust backpressure, yet maintains better draw to cool the engine/generator compartment and the hydraulic fluid. Reduction in the exhaust backpressure increases the available shaft horsepower, increases the pneumatic output, reduces the exhaust gas temperature, and reduces the specific fuel consumption of the AGPU.

**2. PRIORITY CLASSIFICATION.** URGENT.

**3. SUMMARY OF PROBLEM.**

- a. There have been reports that the AGPU exhaust ejector plenum have cracked or corroded to a point that exhaust gas is leaking into the engine/generator compartment causing additional corrosion.
- b. Flu inlet tubes have broken free from the support plate and blown out of the flu.
- c. The current GTE exhaust ejector installation causes excess backpressure that adversely affects engine performance. This can cause compressor stall/surge at high shaft horsepower (electric and hydraulic outputs).
- d. The modified exhaust ejector and inlet tube assemblies do not have sufficient draw to adequately cool the hydraulic fluid.

\* This TB supersedes TB 1-1730-229-30-1, dated 15 May 2000.

## **TB 1-1730-229-30-1**

### **4. INSPECTION PROCEDURES.**

- a. Inspect the installed ejector for concentration of soot indicating a leak. Note that a bad tadpole seal at the engine inlet may also cause soot in the engine compartment. Special attention should be given to the bottom of the exhaust plenum since a leak here could corrode through the bottom of the compartment and the top of the fuel tank.
- b. Look down the flu to see if any of the 17-plenum outlet tubes are missing.

### **5. APPLICATION.**

- a. Any exhaust ejector that is leaking, or has missing outlet tubes is to be replaced with a new exhaust deflector.
- b. This TB authorizes replacement of the current exhaust installation on any AGPU exhaust assemblies if the using unit wants to upgrade the performance of their AGPU.
- c. Replacement of the original unmodified ejector and inlet tube assemblies is recommended whenever the assemblies are removed for any other maintenance.

### **6. CORRECTION PROCEDURES.**

- a. Refer to TM 55-1730-229-34, Section IV, Paragraph 2-9a, and Figure 2-2, Removal and Installation of Major Components. Remove components as necessary to get access to the exhaust ejector assembly.
- b. Remove the exhaust ejector assembly from the AGPU.
- c. Plug 1/4-inch diameter hole in the nipple connecting the surge valve with a 5/16 self-tapping screw (P/N MS51851-106) and Lock Washer (P/N MS35338-45).
- d. Installation:
  - (1) Inspect installation area. Remove all signs of corrosion or rust. Touchup paint if required.
  - (2) Inspect two silicone rubber strips. Ensure that the two rubber strips and washers are in position over the eight front studs (furthest from the engine). Remove washers and rubber strip from the other rear four studs.
  - (3) Remove assembly from shipping skids but leave shipping blocks installed inside the flu to assist in installation. Install a hoisting strap into and around the front side of the flu, centered between the shipping blocks.
  - (4) Carefully lift, holding the flu portion of the assembly. Lower the assembly into position on the AGPU floor over the front eight studs.
  - (5) Remove shipping blocks from inside the flu and slide the deflector out from under flu to check fit with the mounting flange on the engine.

**NOTE**

Add or remove washers under the flu if necessary to align exhaust deflector flange with engine mounting flange.

- (6) Install (2) MS27130-10 flat washers on 2 front studs in corners of flu base. Install (8) star washers on all 8 studs. Important, star washers must not extend over the flange of the deflector. Install (6) modified fender washers on 6 studs such that they extend over the flange on the exhaust deflector. Install and tighten all eight nuts on the studs. Verify that the deflector is free to move between the star washers and under the fender washers.
- (7) Secure the deflector to the engine using the V-band coupling. Ensure there is no gap between the engine and exhaust deflector flange.
- (8) Install deflector drain tube extension. Replace cover and install screws and washers.
- (9) Apply anti-seize compound, (P/N MIL-L-25681) to threads and install the ASP-8 muffler at the surge valve outlet.
- (10) Attach pneumatic hose to elbow with hose clamp.
- (11) Install elbow on flu and secure with nut.
- (12) Replace exhaust access cover using twelve screws and washers.
- (13) Install hydraulic module, paragraph 2-8.

**7. SUPPLY/PARTS AND DISPOSITION.**

- a. The current exhaust ejector is no longer stocked. The new improved performance exhaust installation, P/N 77000-100 (90598), is stocked by DLA (S9C) under the same NSN as the current exhaust ejector.
- b. Existing hardware is used to install new exhaust except for six (6) modified fender washers that are provided with the assembly.
- c. The parts/assemblies/material are to be requisitioned: (The bleed air exhaust muffler and self-tapping screw are already installed on all "D" model AGPUs.)

NOMENCLATURE	NATIONAL STOCK NUMBER	PART NUMBER	CAGE	QTY RQD
Exhaust System, Gas Turbine Engine	2990-01-325-1868	77000-100	90598	1
Muffler, Bleed Air Exhaust	4430-01-472-6930	ASP-8	04049	1
Anti-seize Compound	9150-00-543-7220	MIL-L-25681	96906	AR
Screw, Self-tapping, 5/16 in.	5305-01-090-3012	MS51851-106	96906	1
Washer, Lock, 5/16 inch	5310-00-407-9566	MS35338-45	96906	1

**8. TECHNICAL PUBLICATIONS AFFECTED/CHANGED.**

<u>Publication Number</u>	<u>Date</u>
TM 55-1730-229-12	1 December 1986
TM 55-1730-229-24P	11 September 1988
TM 55-1730-229-34	1 December 1986

**9. POINTS OF CONTACT.**

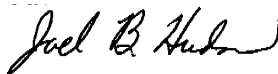
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