

REPORT NAME: Grumman AA5, AA5A, AA5B, AG5B  
INSTRUCTIONS FOR CONTINUED AIRWORTHINESS

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APPROVAL

PFS ENG  
*[Signature]*  
DATE: 6/13/07

FAA

FAA APPROVED

Date: 6/12/07 *[Signature]*

THIS REPORT APPLIES TO AIRCRAFT EQUIPPED WITH PFS-13801, PFS-13802, AND PFS-13803 TUNED EXHAUST SYSTEMS.

REVISION CONTROL

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D	05/21/07	2-4	2-4

Submitted to FAA ACO

Date: 6/15/07

By: *[Signature]*

**It is the responsibility of the aircraft owner/technician to ensure that the most recent revision of these instructions is followed. The most recent revision of this report can be obtained by calling Power Flow Systems, Inc. at (386) 253-8833 or online at [www.powerflowsystems.com](http://www.powerflowsystems.com)**

## 1.0 BASIC OPERATION

Basic operation of the airplane remains the same. The pilot must watch to ensure that redline of the RPM is not exceeded.

## 2.0 AIRWORTHINESS LIMITATIONS

**“The Airworthiness Limitations section is FAA approved and specifies maintenance required under §§43.16 and 91.403 of the Federal Aviation Regulations unless an alternative program has been FAA approved.”**

**2.1 Mandatory Replacement Time – None for the Exhaust. The air filter provided with PFS-13802 should be replaced every 200 hours or when 50% covered with debris.**

**2.2 Structural Inspection Interval – At 100 hour or Annual intervals, depending on the service regime of the aircraft.**

**2.3 Structural Inspection Procedure – See Section 5.0 Below.**

## 3.0 TROUBLESHOOTING

<i>Problem</i>	<i>Possible Cause</i>	<i>Solution</i>
Exhaust smell in cockpit	Exhaust Leak	Inspect exhaust system for leaks
Excessive vibration	Collector not centered on header pipes	Reposition collector -- ensure minimum of 1 ½” Penetration per header into central collector system
	Propeller not properly balanced	Have propeller balanced
Excessive noise	Muffler insert damaged or missing	Contact PFS, Inc. for a new muffler insert

## 4.0 MAXIMIZING SERVICE LIFE

To get the maximum possible service life from your Power Flow Systems Tuned Exhaust, follow the following steps.

4.1 Dynamically balance your propeller to below 0.2 ips (inches per second) every 2 years or 1000 hours (whichever occurs first).

4.2 Dynamically balance your propeller to below 0.2 ips after modifying, overhauling, dressing, or replacing any rotating component on the engine or propeller.

4.3 Keep slip joints lubricated with a high temperature anti-seize.

4.4 Maintain even engine compressions above 70/80 psi.

4.5 Keep magnetos in good working order and ensure that mag drops are even and less than the maximum recommended by the aircraft manufacture.

PLEASE NOTE THAT FAILURE TO COMPLY WITH ONE OR MORE OF THESE STEPS MAY IMPACT THE PRODUCT WARRANTY. PLEASE CONSULT YOUR WARRANTY DOCUMENTATION FOR FURTHER DETAILS.

## 5.0 REMOVAL

1. Follow the latest FAA approved revision of the installation instructions, report PFS-0046-00 or PFS-0047-00, as applicable, in reverse order.

## 6.0 INSPECTION

The exhaust system must be thoroughly inspected, especially within the heat exchanger section. A detailed inspection of the exhaust system must be performed in accordance with the latest revision of the Aircraft Service Manual at either 100 hour or annual intervals. The airbox included with PFS-13802 should also be inspected for excessive wear or cracking. A replacement air filter for PFS-13802 is available from Power Flow Systems, Inc.

All components displaying cracking or general deterioration must be replaced with new parts or repaired in accordance with the latest approved revision of AC 43.13.

### A. Exhaust Installed

1. Remove engine cowling
2. Loosen and remove shrouds so that all surfaces of the exhaust system are visible
3. Check for holes, cracks, and burned spots. Especially check areas adjacent to welds. Look for exhaust gas deposits in surrounding areas. This may indicate an exhaust leak.
4. Inspect screen covering carb heat outlet. Screens must be secure with no risk of material breaking off.
5. Inspect pins on clamps. Pins should not indicate excessive wear or cutting. If worn or cut contact Power Flow Systems, Inc. for replacement.
6. Inspect holes that pins are inserted in for elongation. If elongated contact Power Flow Systems, Inc. for replacement.
7. Inspect the packing material in muffler body. If the packing is missing or deteriorated, it will require replacement. New packing inserts are available from Power Flow Systems, Inc.
8. Ensure Placard is visible to pilot that states "The Power Flow Systems, Inc. tuned exhaust system installed on this aircraft may cause the aircraft to burn more fuel at certain power settings. It is the Pilot's responsibility to determine what, if any, change in fuel flow exists and to plan accordingly.

## B. Exhaust Removed

If any defects (cracks, burns, etc.) on the collector assembly (other than on the shroud) are noted during the visual inspection, then the collector needs to be pressure tested using the procedure below:

1. Remove exhaust pipes and heat exchanger assembly.
2. **All slip joints must be disassembled and lubricated with a high-temperature anti-seize compound. (Only necessary at 500hr or annual intervals, whichever comes first) This should be performed more frequently if headers seize between inspections. While disassembled, inspect for wear or galling.**
3. Remove shrouds.
4. Seal openings with expansion rubber plugs.
5. Submerge the collector assembly in water.
6. Using a manometer or pressure gauge, apply 3.0 to 3.5 PSI (approximately 7" Hg) of air pressure.
7. Let the unit sit pressurized for 10 to 30 seconds. The leak rate should be zero.
8. If a leak is found in the collector assembly, replace or repair before further flight.
9. If no leaks are found, dry components and install on airplane.

All components displaying cracking or general deterioration must be replaced with new parts or repaired in accordance with the latest approved revision of AC 43.13.

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