REPORT NAME: PFS-13201 INSTRUCTIONS FOR CONTINUED AIRWORTHINESS

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INSTRUCTIONS FOR CONTINUED AIRWORTHINESS

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 obtained by calling Power Flow Systems, Inc. at (386) 253-8833 or online at 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

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

Problem	Possible Cause	Solution
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 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-0058-00, 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.

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

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 pin on clamp. Pin should not indicate excessive wear or cutting. If worn or cut contact Power Flow Systems, Inc. for a replacement.
6. Inspect hole that pin is inserted in for elongation. If elongated contact Power Flow Systems, Inc for a replacement.
7. Inspect packing material in muffler body. If the packing material 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 AC 43.13 or the latest approved revision.

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