Piper™
THE NEW PIPER AIRCRAFT, INC.

VSP - 116A

DATED: May 5, 1999 (S/M)

VENDOR SERVICE PUBLICATION

(VSP 116A supercedes and voids VSP 116 dated January 4, 1999)

TO: All affected owners, all Piper Domestic and International Distributors, Authorized Piper Service Centers and publication subscribers.

SUBJECT: Distribution of: **TEXTRON LYCOMING SERVICE INSTRUCTION NO. 1492B, "PISTON PIN PLUG WEAR INSPECTION".**

MODELS AFFECTED:	**SERIAL NUMBERS AFFECTED:**
PA-28-161 Cadet	2841360 through 2841365
PA-28-161 Warrior II	2816104, and 2816105
PA-28-161 Warrior III	2816110 through 2816119, 2842001 and Up
PA-28-181 Archer II	2890197 through 2890205
PA-28-181 Archer III	2890206 through 2890231 2843001 and Up
PA-28-236 Dakota	2811038 through 2811050
PA-28R-201 Arrow	2837061, 2844001 and Up
PA-32R-301 Saratoga II HP	3213042 through 3213103 3246001 and Up
PA-32R-301T Saratoga II TC	3257002 and Up
PA-44-180 Seminole	4496001 and Up
PA-46-350P Malibu Mirage	4622142 through 4622200 4636001 and Up

Note:
The Models Affected and Serial Numbers listed are new original equipment installations only and do not reflect requirements for overhauled or remanufactured engines.

COMPLIANCE TIME: In accordance with the attached TEXTRON LYCOMING Service Instruction SI 1492B, "Piston Pin Plug Wear Inspection". *Check the attached publication for compliance time.*

PURPOSE: To provide distribution of TEXTRON LYCOMING Service Instruction SI 1492B , "Piston Pin Plug Wear Inspection".

Caution:
Failure to comply with Textron Lycoming Service Instruction SI 1492B may result in an abnormally high metallic content in the engine oil and filter. The high metal content in the engine oil may lead to premature wear of engine components.

ATA: 7232

TEXTRON Lycoming

652 Oliver Street
Williamsport, PA 17701 U.S.A.
570/323-6181

SERVICE INSTRUCTION

DATE: February 26, 1999

Service Instruction No. 1492B
(Supersedes Service Instruction No. 1492A)
Engineering Aspects are
FAA Approved

SUBJECT: Piston Pin Plug Wear Inspection

MODELS AFFECTED: All Textron Lycoming new or factory remanufactured or factory overhauled engines shipped from Textron Lycoming after January 1, 1994, and all engines which have had a Textron Lycoming Cylinder Kit installed after January 1, 1994.

TIME OF COMPLIANCE: At next oil change/oil filter replacement, not to exceed 50 hours of engine operation (first 10 hours and next 25 hours for new, remanufactured, or newly overhauled engines) and at each 50 hours of operation thereafter.

Field reports indicate an increase in incidents of abnormally worn piston pin plugs in some units shipped after January 1, 1994. Evidence of such wear can be detected by use of an oil filter content inspection or spectrographic oil analysis.

Refer to the latest edition of Textron Lycoming Service Bulletin No. 480 for oil and filter change intervals and procedures.

I. Oil Filter/Screen Content Inspection:

1. For engines employing a pressure screen system, remove the screen and check for metal particles.
2. Using approved method (e.g., for full flow, spin-on filters, use Champion Tool CT-470 or Airwolf Cutter AFC-470) open the filter.
3. Check the condition of the oil from the filter. Inspect for a high concentration of aluminum in the oil, indicated by a shining, metallic residue.
4. After draining oil, remove the suction screen from the oil sump and check for metal particles.
5. Remove the paper element from the filter.
6. Carefully unfold the paper element and examine the material trapped in the filter.
7. When performing the regular filter/screen inspection, check for premature or excessive wear of piston pin plugs, indicated by the presence of metal particles, shavings, or flakes.

NOTE

In new or newly overhauled engines some small particles of metallic shavings might be found, but these are generally of no consequence and should not be confused with particles produced by impacting, abrasion or pressure.

8. Evidence of metal contamination found in the filter element or screen requires further examination to determine the cause. Below is a list of recommended actions based on the appearance and approximate quantity of particles.

a. 5 or fewer small (1/16 inch diameter or less) pieces of metal – place aircraft back in service and check oil filter or screen at next scheduled oil change/oil filter replacement.

b. 10 to 20 small (1/16 inch diameter or less) pieces of shiny flake–like, nonmagnetic, or 10 or fewer short hair–like pieces of magnetic material – place engine back in service and again check oil filter or screen in 25 hours.

c. 20 to 40 small pieces as in step b. – place the aircraft back in service and check oil filter or screen at the next 10 hours.

d. As in step b., but larger amount, such as 45–60 small pieces – change filter or clean screen, drain oil, and refill. Run engine on ground for 20–30 minutes. Inspect filter/screen. If clean, fly aircraft for 1 to 2 hours and again inspect filter/screen. If clean, inspect filter/screen after 10 hours of flight time.

NOTE

In items e. through j., below, the engine should be removed from service until the source of the metal is determined and corrective maintenance has been accomplished.

e. Pieces of metal ranging in size of broken lead pencil point or greater. Remove suction (sump) screen to check for pieces of metal that may have fallen into the sump. In any event, ground aircraft and conduct investigation. A mixture of magnetic and nonmagnetic material in this case often times means valve or ring and piston failure. Removing bottom spark plugs usually reveals the offending cylinder.

f. Nonmagnetic plating averaging approximately 1/16 inch in diameter; may have copperish tint. Quantity found – 1/4 teaspoonful or more; ground aircraft and investigate.

g. Same as in step b. but may be slightly larger in size and minus copperish tint. On direct drive engines, propeller action may be impaired. Ground aircraft and investigate.

h. Nonmagnetic metal brass or copperish colored. Resembles coarse sand in consistency. Quantity of 1/4 teaspoonful or more – ground aircraft and investigate.

i. Anytime metal is found in the amount of 1/2 teaspoonful or more, it is justification for engine removal.

j. If any single or several pieces of magnetic or nonmagnetic metal larger than previously mentioned are found, ground aircraft.

NOTE

If the origin of the metal contamination cannot be determined, a call may be made to the Textron Lycoming Product Support Department. A good description of the metal may result in placing its origin. When phoning Textron Lycoming or when returning metal removed from engines, supply the complete engine model designation, serial number, history of engine, oil temperatures, oil pressures, and any unusual behavior of the engine on the ground or during flight. Do not ship material to Textron Lycoming without first calling the Product Support Department.

9. If examination of the oil filter or screen, per the above, indicates abnormal aluminum or iron content contact a technical representative of Textron Lycoming Product Support Department at (570) 323–6181.

NOTE

Warranty for the metal analysis is available only if the engine from which the sample is taken is a new, remanufactured, or overhauled engine from the Textron Lycoming factory.

II. Spectrographic Oil Analysis:

NOTE

Spectrographic oil analysis does not replace recommended maintenance practices such as oil filter and screen content inspection, cylinder differential pressure compression checks, and boroscopic examination, however, Textron Lycoming does encourage the use of spectrographic oil analysis at every oil change as method of monitoring engine component wear rate. Refer to the latest edition of Textron Lycoming Service Letter No. L171.

1. In accordance with the latest edition of Textron Lycoming Service Letter No. L171, collect an oil sample and submit it for analysis by a qualified facility.

NOTE

Typically, the first oil analysis of a new, remanufactured, or newly overhauled engine will indicate higher concentrations of metal. After an initial break–in period, metal content should decrease rapidly to a level that remains essentially constant.

2. If an oil analysis report indicates elevated levels of aluminum (above 30 parts per million for non–turbocharged engines; above 40 parts per million for turbocharged engines) or iron (above 60 parts per million for non–turbocharged engines; above 80 parts per million for turbocharged engines), contact a technical representative at the Textron Lycoming Factory Product Support Department.

3. If in a continuing program of oil analysis, results show a trend toward an increase in aluminum or iron content, inspect contents of the filter and screen in accordance with the procedures in Part I, Oil Filter/ Suction Screen Inspection, above.

WARRANTY EXTENSION.

Please refer to the attached Warranty Extension regarding piston pin plug wear.

TEXTRON Lycoming

WARRANTY EXTENSION

FOR

PISTON PIN PLUG WEAR

The engine warranty period with respect to Textron Lycoming piston pin plug wear is being extended to a full three years from the in service date or to TBO, whichever occurs first. This warranty extension will cover any engine damage caused by excessive wear of Textron Lycoming piston pin plugs installed in Textron Lycoming cylinders. This extension is valid for all new, remanufactured, and overhaul engines, for cylinder kits, and for piston pin plug spare parts shipped from Textron Lycoming on or after January 1, 1996. Piston pin plug wear or engine damage caused by rust or corrosion, improper operation, or improper maintenance is excluded from this warranty extension. Proof of purchase of Textron Lycoming cylinder kits and/or piston pin plugs must be submitted with warranty applications.

Textron Lycoming continues to stress the importance of good maintenance, including mandatory oil filter element checks and recommended oil analysis trending. These checks are intended to identify any excessive wear before it causes damage to the engine. Recently issued Service Instruction No. 1492A puts special emphasis on the importance of these good maintenance procedures.

This is an extension to the warranty period of your existing Textron Lycoming Warranty Policy. All other procedures, obligations, and limitations remain in effect as stated in the original warranty.

LIMITATION OF LIABILITY

IN NO EVENT, WHETHER AS A RESULT OF A BREACH OF WARRANTY, CONTRACT OR ALLEGED NEGLIGENCE, SHALL TEXTRON LYCOMING BE LIABLE FOR SPECIAL OR CONSEQUENTIAL OR ANY OTHER DAMAGES, INCLUDING BUT NOT LIMITED TO LOSS OF PROFITS OR REVENUES, LOSS OF USE OF THE ENGINE OR COST OF A REPLACEMENT.

No agreement varying this warranty or Textron Lycoming's obligations under it will be binding upon Textron Lycoming unless in writing signed by a duly authorized representative of Textron Lycoming.

Effective February 1, 1999

Textron Lycoming
Williamsport, Pennsylvania

Textron Lycoming reserves the right to revise or terminate the terms of this Extension without prior notice