

PIPER

Customer Services

SERVICE RECEIVED LETTER

No. 636

Piper Aircraft Corporation NOV 1 1972

Lock Haven, Pennsylvania, U.S.A.

October 24, 1972

SERVICE COMMUNICATIONS DEPT

Subject:

Alternator Fan Replacement (Prestolite Bulletin ASM 8) - reference attached Lycoming Service Bulletin No. 355, dated August 4, 1972.

Models and Serial Numbers Affected:

Refer to attached Lycoming Service Bulletin No. 355, Models Affected.

Compliance Time:

Refer to attached Lycoming Service Bulletin No. 355, Time of Compliance.

Purpose:

To provide distribution of the attached Lycoming Service Bulletin No. 355.

Balance of Service Letter Format:

Not applicable; refer to attached Lycoming Service Bulletin No. 355 for necessary modification material, installation instructions, etc.

AVCO LYCOMING DIVISION

WILLIAMSPORT, PENNSYLVANIA 17701

Service Bulletin



DATE: August 4, 1972

Service Bulletin No. 355
Engineering Aspects are
FAA (DEER) Approved

SUBJECT: Alternator Fan Replacement (Prestolite Bulletin ASM 8)

MODELS AFFECTED: All Avco Lycoming aircraft engines equipped with Prestolite belt driven alternators except the 24 volt, 100 ampere model ALV 6403LS (LW 10979). Also, all Avco Lycoming engines shipped after August 1, 1972 with Prestolite alternators have the new fan installed and are not subject to the requirements of this bulletin.

TIME OF COMPLIANCE: Before January 1, 1973; to eliminate periodic inspection of the alternator fan and avoid damage that could occur from a broken fan, replacement as herein described is recommended as soon as practical.


The ventilating fan that has been employed in Prestolite alternators is a single unit of welded construction. Periodic inspection of this fan is required by FAA. To eliminate this inspection, a new fan has been designed and introduced in current production. The new fan is available for replacement as described in the Prestolite Bulletin No. ASM 8, reprinted herewith in its entirety.

The new ventilating fan and backing plate package, No. 90-2241 may be obtained through all Avco Lycoming

distributors at \$5.54 plus shipping cost. Full credit will be allowed for the cost of the replacement package assembled on alternators with less than 150 hours in service; the old fan, along with the engine and alternator serial number must accompany credit claim.

NOTE

The new fan can be distinguished from the old by its color; the new fan is unpainted aluminum; the old, single piece fan is black.

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|---|--|--------------------------------------|--------------|
|  | | AIRCRAFT SERVICE BULLETIN | |
| NUMBER | ASM-8 | ISSUED | 5-30-72 |
| SUBJECT | New Ventilating Fan Assembly | | |
| APPLICATION | All Belt Driven Aircraft Alternators Except ALV Series | | |
| | | PAGE NO. | 1 OF 2 PAGES |

Prestolite has designed and released a new ventilating fan assembly that we recommend be used whenever replacement is necessary.

The new, two piece, unwelded construction ventilating fan, shown in Figure 1, consists of a thick gauge aluminum material ventilating fan and a thin gauge aluminum material backing plate. The backing plate is dished to provide vibration dampening when the fan and backing plate are properly assembled on the shaft and the retaining nut is torqued to the proper specification.

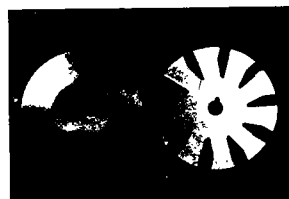


Figure 1

The new fan and backing plate, being aluminum, are easily identified by their appearance.

The new ventilating fan and backing plate are contained in parts package number 90-2241

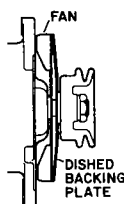


Figure 2



Figure 3

INSTALLATION

Correct assembly of the fan and backing plate is shown in Figure 2. **Make certain the outside edge of the backing plate contacts the outside edge of the fan.** Install the pulley, lockwasher, and retaining nut then torque the retaining nut to 35 Ft. Lbs. minimum to 40 Ft. Lbs. maximum. Use a strap wrench or a pulley gripping tool, similar to the type shown in Figure 3, to hold the pulley while torquing the retaining nut.

NOTE: Proper tightening of the pulley retaining nut and proper belt tension are extremely important as these have been the two major contributing factors to the ventilating fan problems. Make certain the torque wrench is accurate and **DO NOT** undertorque or overtorque the retaining nut.

After installing the alternator on the engine, use one of the two following methods to adjust the fan belt tension.

1. **SLIP TORQUE METHOD:** This method consists of installing a torque wrench on the pulley retaining nut and measuring the amount of torque required to make the pulley slip. Turn the torque wrench in a clockwise direction, as viewed from the pulley end, and adjust belt tension accordingly.

| <u>BELT WIDTH</u> | <u>SLIP TORQUE NEW BELT</u> | <u>SLIP TORQUE USED BELT</u> |
|-------------------|---------------------------------|----------------------------------|
| 3/8 Inch | 11 to 13 Ft. Lbs. | 7 to 9 Ft. Lbs. |
| 1/2 Inch | 13 to 15 Ft. Lbs. | 9 to 11 Ft. Lbs. |

If a new belt is being installed the slip torque should be checked to the used belt specification after 1 hour operation, at 25 hours, and each 100 hours thereafter. See Aircraft Manual or call Aircraft Manufacturer.

NOTE: The higher torque value for the new belts is to compensate for the initial stretch of the belt that occurs as soon as it is operated. Do not use the higher torque value for a belt that has been previously used.

2. **BELT TENSION METHOD:** This method consists of installing a belt tension meter on the fan belt at mid point of the longest unsupported section of the belt and adjusting the alternator to obtain the specifications listed below.

The following specifications are for a 3 to 1 pulley ratio with a belt wrap of 140° on the alternator pulley.

| <u>TYPE</u> | <u>OUTPUT</u> | <u>BELT LOAD</u> |
|---------------|---------------|------------------|
| ALE | 40 Amp | 50 Lbs. |
| ALH, ALT, ALZ | 50 Amp | 75 Lbs. |
| ALY, ANG | 60 Amp | 75 Lbs. |
| ALU, ALX | 70 Amp | 75 Lbs. |

The meter used for these specifications was a Borroughs Belt Tension Meter Model #BT-33-73F.

The above specifications are for a used belt, or a new belt after 1 hour operation.