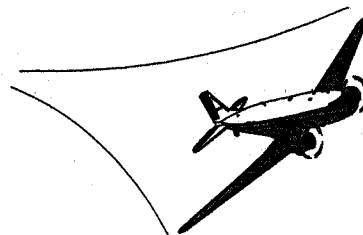


SPECIAL AIRWORTHINESS INFORMATION BULLETIN

Aircraft Certification Service
Washington, DC



U.S. Department
of Transportation
**Federal Aviation
Administration**

No. NE-02-31
June 7, 2002

We post SAIBs on the internet at "av-info.faa.gov"

This is information only. Recommendations are not mandatory.

Introduction

This Special Airworthiness Information Bulletin (SAIB) recommends that you, an owner or operator of certain **Teledyne Continental Motors (TCM)** and **Lycoming** series engines listed below *equipped with TCM (formerly Bendix) model D-2000/D-3000 series dual magnetos*, perform maintenance of the distributor gears and operation of the engine/magnetos.

MANUFACTURER	MODEL
TCM	6-260-A, 6-285-A, -B, -BA, -C, CA, 6-320-A and T6-320-A series "Tiara" engines
Lycoming	O-320, O-360, IO-360, LO-360, TIO-360, HIO-360, L/TO-360, O-540, AEIO-540, IO-540 and L/TIO-540 series engines

Background

Investigation of a recent incident in which a Piper model PA-32RT-300 experienced engine failure on take-off revealed that the cause was the failure of both distributor gears in the TCM dual magneto. The magneto was a factory overhauled unit with 319 hours time-in-service (TIS). As is common practice, the distributor gears were deemed airworthy and were not replaced with new parts during the overhaul.

There are an additional eleven (11) service difficulty reports since 1995 relating to the distributor gears used in dual magnetos. The data does not show a correlation between TIS and failure.

The TCM Ignition Systems and Support Master Service Manual specifies inspection of the distributor gears, as well as other components, at magneto overhaul and every 500 hours of operation. TCM Service Bulletin, SB658, issued on August 16, 1996, provides additional instructions for the maintenance of the distributor gears and operation of the engine/magneto. The information in both documents should be incorporated into owner/operator procedures as well as the procedures of maintenance personnel/repair facilities that maintain/overhaul dual magnetos.

Overhaul facilities, during inspection of distributor gears, should be especially alert for any indications of distributor gear distress with special emphasis on the teeth. We recommend that you use the latest configuration gear even if it means having to discard otherwise serviceable parts.

TCM SB658 discusses items that pertain to operation of dual magnetos:

- *Ventilation* is essential for continued airworthiness because the magneto generates contaminants during normal operation. The bulletin explains how to ensure that the service life will not be cut short because of improper ventilation of the magneto resulting in excessive wear due to contaminants.
- *Engine kickback* is unlikely to cause distributor gear damage; however, existing distributor gear distress may cause engine kickback. Therefore, if troubleshooting after a kickback event does not indicate some other cause for the kickback, inspect all distributor gear teeth for damage.
- *Operation of the engine* with the oil temperature above the gauge red line. Should this ever occur, in addition to the engine inspection that would be indicated, the magneto distributor gears should be inspected before further flight for any discoloration and/or broken or missing teeth.

Obviously, presence of any of these conditions would require replacing the distributor gears prior to further flight.

Recommendation

Based on currently available information, the FAA is only recommending the following actions. However, we will continue this investigation, and may find it necessary to issue an Airworthiness Directive based on future analysis.

We highly recommend that you comply with the Master Service Manual and TCM SB658 whenever you perform maintenance, install the magneto on the engine, and whenever you encounter the conditions described in the service bulletin.

For free copies of TCM SB658, call the TCM Customer Service Department at (888) 221-6442, or write to them at Teledyne Continental Motors, P.O. Box 90, Mobile AL 36601. In addition, the complete text of SB658 is available on the TCM website at: www.TCMLINK.com. TCM's Service Manual is also available, but is not free.

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