



SUBJ: Dual Magnetos

This is information only. Recommendations aren't mandatory.

Introduction

This Special Airworthiness Information Bulletin (SAIB) alerts you, owners, operators, and certificated repair facilities of **Lycoming four, six, and eight cylinder reciprocating engines with a Teledyne Continental Motors (TCM) (formerly Bendix) Series D2000 and D3000 Dual Magneto (2 magnetos with a single drive)**. Several conditions identified could result in separation of the magneto from the engine, which will result in the loss of power. These engines can be identified by the letter "D" in the 4th or 5th character in the engine model's suffix.

Most of the problems have occurred in Lycoming IO-360-A1B6**D** and IO-360-A3B6**D** engines installed on Mooney M20J-201 and Cessna 177RG aircraft, although the potential for magneto separation exists on any engine with a TCM Dual Magneto installed. At this time, this airworthiness concern isn't an unsafe condition that would warrant airworthiness directive action under Title 14 of the Code of Federal Regulations (14 CFR) part 39.

Background

For various reasons, several incidents of TCM Dual Magnetos separating from Lycoming engines during flight have occurred.

One failure occurred on the first flight after installation of a newly overhauled magneto. The failure occurred due to cracks in the magneto housing mounting flange area that were present as a result of the magneto's prior operation. During the overhaul process, the overhaul manual only required visual inspection of the magneto.

Another failure mode has been due to the use of the wrong gasket between the magneto and the engine accessory housing. Lycoming Service Instruction (SI) 1508B clearly shows that the gasket must be circular and no part of the gasket can extend beyond the flange of the magneto housing. To be more specific, using a gasket with extensions on the outside diameter that allow the stud from the accessory housing to go through the gasket, and position the gasket between the magneto clamp and the accessory housing, is unacceptable. When a gasket is located between the magneto clamp and accessory housing it will compress and in time result in a loose magneto. A loose magneto will result in the magneto clamp wearing into the magneto mounting flange. Ultimately, the flange thickness will be reduced and the flange will fail.

Improper maintenance usually occurs when magneto maintenance is performed in the field and the nuts holding the magneto clamps in position are removed or loosened. When these nuts are reinstalled, new lock washers must be used because they lose their locking ability with repetitive usage. The ability to obtain the proper torque on the nuts securing the magneto clamps or even make them adequately tight depends on the accessibility of the nuts when the engine is installed in the airplane. Magnetos are more accessible on some airplanes than on others and obtaining the correct torque is easier. However, on some installations, the working room is limited and the magneto clamping nuts are inaccessible making proper torquing difficult. As stated above, most of the problems have occurred on Lycoming IO-360-A1B6**D** and IO-360-A3B6**D** engines installed in

Mooney M20J-201 and Cessna 177RG aircraft because of inaccessibility of the nuts securing the magneto clamps.

Recommendations

1. Before installing a magneto, check the magneto housing mounting flange for wear and cracks. A worn or cracked flange might subsequently fail, resulting in the magneto separating from the engine. If the flange is worn or cracked, replace the magneto.
2. Only install the correct gasket, part number (P/N) LW-12681, which is a circular gasket, between the magneto housing mounting flange and the engine accessory housing. gasket, P/N LW-12681, does not extend over the magneto mounting studs and it must not be installed between the magneto clamps and the engine accessory housing. If a gasket is installed between the magneto clamps and the engine accessory housing, it is the wrong gasket and must be replaced.
3. Only use the new style magneto clamps, P/N 66M19385.
4. Each time a magneto clamp is removed, install a new lock washer, P/N STD-475, before re-installing the nut, P/N STD-1410.
5. Torque the nuts that secure the magneto to the accessory housing using the torque specified in Lycoming Service Instruction No. 1508B.
6. Repetitively inspect the magneto for looseness by attempting to move it by hand, at each oil change or within every 50 operating hours time-in-service. If the magneto is loose, visually check the magneto mounting flange for wear and cracks. If no wear or cracks are present, re-torque nuts, P/N STD-1410, as specified in Lycoming Service Instruction No. 1508B. If the flange is worn or cracked, replace the magneto.
7. Repetitively check the torque on the magneto clamp nuts, P/N STD-1410, with a torque wrench at each annual or 100-hour inspection. If the nuts are loose, visually check the magneto mounting flange for wear and cracks. If no wear or cracks are present, re-torque the nuts as specified in Lycoming Service Instruction No. 1508B. If the flange is worn or cracked, replace the magneto.
8. Cracks in the magneto mounting flange may have been caused by prior operation of the engine with loose magneto clamps. We strongly recommend that you ensure that the facility overhauling your magneto has inspected, or will inspect, the magneto housing for cracks by using a form of non-destructive test (NDT) such as fluorescent-penetrant inspection (FPI), dye-penetrant inspection (DPI), or by a procedure recommended by TCM. Since there are no NDT instructions in the current TCM Magneto Overhaul Manual, we recommend the use of an FPI or DPI, performed by a Level 1 Certified person or a person with an FAA Airframe and Powerplant Mechanic Certificate as specified in FAA Advisory Circular 43-13, Chapter 5.
9. Refer to Lycoming Service Instruction No. 1508B for additional information.

For Further Information Contact

Norm Perenson, Aerospace Engineer, New York Aircraft Certification Office, FAA, 1600 Stewart Avenue, Suite 410, Westbury, NY 11590; phone: (516) 228-7337; fax: (516) 794-5531; e-mail: norman.perenson@faa.gov.

For Related Service Information Contact

Lycoming Engines, 652 Oliver St, Williamsport, PA 17701; phone: (570) 323-6181; fax: (570) 327-7101; or go to their Web site at: <http://www.lycoming.textron.com/support/publications/service-instructions/pdfs/SI1508B.pdf>.