

MANDATORY

SERVICE BULLETIN

DATE: October 17, 2008
Service Bulletin No. 584B
(Supersedes Service Bulletin No. 584A)
Engineering Aspects
FAA Approved

SUBJECT: Reprint of MANDATORY Unison Service Bulletin No. SB3-08A

MODELS AFFECTED: All Lycoming new, overhauled, rebuilt, or repaired engines with:

1. A Slick model 4200/4300/6200/6300 series magneto with a serial number beginning with 0409#### through 08080453.
2. A LASAR model 4700/6700 series magneto with a serial number beginning with 0409#### through 08080453.
3. Any magneto which has had the carbon brush or distributor block assembly replaced with components packaged between September 1, 2004 and August 14, 2008.

NOTE 1: The magneto model number and serial number can be found on the magneto identification plate.

TIME OF COMPLIANCE: At the first 25 hours of engine operation, then at 500 hours of engine operation, or at annual inspection; whichever occurs first, until terminating action is accomplished.

Lycoming has learned that all new, overhaul, rebuilt, or repaired engines with a Unison Industries Slick model 4200/4300/6200/6300 series or LASAR model 4700/6700 series magneto with the serial number range listed above may experience premature carbon brush wear. Premature brush wear can lead to failure of the magneto to provide a consistent spark and may cause loss of engine power.

Unison Industries MANDATORY Service Bulletin No. SB3-08A is reprinted in its entirety as follows. The compliance measures stated in the Unison service bulletin are reflective of an assessment at the component level of a single magneto.

Lycoming Engines time of compliance differs from the Unison recommendation because the engine system is comprised of redundant magnetos. Additionally, pre-flight inspection procedures include magneto checks which ensure that both units are operational prior to flight. The system design and recommended operating procedures result in an incident rate for complete power loss below that required for Class 1 aircraft (reference: FAA AC 23.1309-1C page 16, Figure 2; available at <http://rgl.faa.gov/>).



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NOTE 2

For affected magnetos shipped from Lycoming as a spare or engine component, contact Lycoming. Contact information for Lycoming is:

Lycoming Engines
652 Oliver Street
Williamsport, PA 17701
Tel: 1-800-258-3279

NOTE 3

For information on determining which magnetos have had carbon brush or distributor block assembly replaced with components packaged between September 1, 2004 and August 14, 2008, contact Unison Industries.

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Service Bulletin

UNISON PROPRIETARY INFORMATION

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TO: Aircraft manufacturers, distributors, dealers, engine overhaul facilities, owners and operators of Slick Aircraft Products aircraft magnetos.

SUBJECT: Mandatory inspections on all Slick 4200/6200/4300/6300 and LASAR™ 4700/6700 magnetos

MAGNETO MODELS

- AFFECTED:
- Slick and LASAR™ magnetos with serial numbers beginning with 0409XXXX through 08080453.
 - Magnetos which have had carbon brush or distributor block assembly replaced with components packaged between September 1, 2004 and August 14, 2008.

ENGINE MODELS

AFFECTED: Engines utilizing Slick and LASAR™ magnetos.

AIRFRAME MODELS

AFFECTED: Aircraft utilizing Slick and LASAR™ magnetos.

BACKGROUND

INFORMATION: Field reports indicate operators have experienced premature carbon brush wear. Premature brush wear can lead to failure of the magneto to provide consistent spark and possible loss of engine power. This bulletin describes an inspection schedule for specific serial number ranges and magneto and brush operating times due to observed variations in premature wear rates.

Bulletin SB3-08A supersedes bulletin SB3-08. The bulletin has been updated to ease the inspection schedule for low operating time magnetos, to provide an ending serial number for the affected range of magnetos, and to announce the availability of new design magnetos and replacement parts.

Inspections that were carried out per the schedule originally recommended in SB3-08 should be considered when determining the need for additional inspections per this revised bulletin.

For magnetos that require continued special inspections per this bulletin, Unison recommends replacement of the carbon brush, or distributor assembly, or magneto with new design parts as described in the Detailed Instructions to prevent the need for additional special inspections.

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New Magnetos, manufactured after the ending serial number indicated, and new replacement Brush Kits, and Distributor Kits, manufactured after August 14, 2008, contain a new carbon brush material that is less susceptible to accelerated side-wear in the distributor gear shaft. The new material has successfully completed substantial bench and flight tests, accumulating extensive service time in both four and six cylinder engine applications. Design improvements have also been made to the distributor gear assembly, revising tolerances to reduce gear shaft end-play to help reduce brush side-wear, and to the distributor bearing support bar, adding ribs to effectively increase the distance across the insulating material surface.

- COMPLIANCE:
- For all magnetos with serial numbers 0409XXXX through 0611XXXX, and all magnetos that have had a carbon brush or distributor block replaced with components packaged between September 1, 2004 and November 30, 2006 perform Compliance Step 2 only. See Detailed Instructions for Service Bulletin ending compliance information.
 - For all magnetos with serial numbers between 0612XXXX and 08080453, and all magnetos that have had a carbon brush or distributor block replaced with components packaged between December 1, 2006 and August 14, 2008, perform Compliance Steps 1 or 2 as applicable based on magneto operating time. See Detailed Instructions for Service Bulletin ending compliance information.

COMPLIANCE STEPS

- * Total magneto operating time is defined as magneto engine operating time since new or since carbon brush replacement, whichever is less.
1. For magnetos with some operating time but less than 250 hours of engine operating time, if not previously inspected per SB3-08 initial issue, inspect within the next 25 hours of operation. Inspect again within the next 250 hours or at the 500 hour magneto service interval, whichever comes first. Subsequently follow the recommended inspection schedule in the applicable Unison or engine/airframe manufacturer's Maintenance and Overhaul publications.
 2. For magnetos with greater than 250 hours of engine operating time that have not yet been inspected pursuant to this service bulletin, inspect the magneto within the next 50 hours or at next annual inspection, whichever occurs first. Subsequently, follow the recommended inspection schedule in the applicable Unison, or engine or airframe manufacturer's Maintenance and Overhaul publication(s). No further special inspections per this bulletin are required unless brush or distributor assembly is replaced.

NOTE: If the distributor block assembly or carbon brush are replaced with parts packaged between September 1, 2004 and August 14, 2008, perform Service Bulletin requirements as applicable.

PROOF OF COMPLIANCE: Appropriate logbook entries.

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PARTS REQUIRED

PER BULLETIN: As required by inspections described in this Service Bulletin, do one or more of the following: replace magneto, or distributor block (4-cylinder distributor Kit P/N K3822 or 6-cylinder distributor Kit P/N K3823), or carbon brush (Kit P/N K3215), or coil (Kit P/N K3975 or K5275) specified in Maintenance and Overhaul Manuals L-1037, L-1363, or L-1503 as applicable.

TOOLS REQUIRED

PER BULLETIN: Slick T-100 Tool Kit, magneto timing light, T-300 SynchroLASAR™ and standard shop tools as applicable.

WEIGHT CHANGE: None.

REQUIRED SERVICE

LITERATURE: Refer to the following literature when performing the instructions listed below:

Slick 4200/6200 Magneto Maintenance and Overhaul Manual L-1037

Slick 4300/6300 Magneto Maintenance and Overhaul Manual L-1363

LASAR™ 4700/6700 Magneto Maintenance and Overhaul Manual L-1503

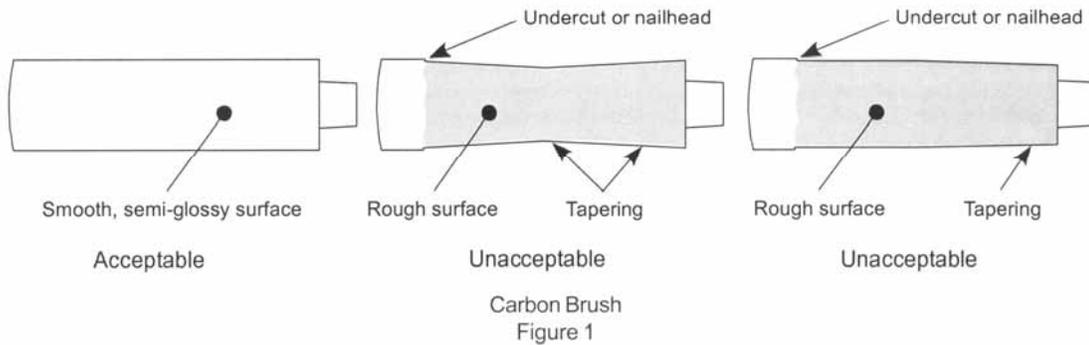
Slick Service Bulletin SB2-08 - Magneto Breaker Cam Inspection

WARRANTY INFORMATION:

If damage or premature wear listed in this Service Bulletin is discovered during inspection, and the magneto is within Unison's 1-year warranty period, the magneto may be returned through your point of sale for warranty replacement. For magnetos outside the 1-year warranty period in which components listed in this bulletin have failed, those components may be returned under warranty through your point of sale.

DETAILED INSTRUCTIONS:

1. Use lighted magnification (4X minimum) to inspect carbon brush for rough surface and possible tapering. **REPLACE CARBON BRUSH THAT SHOWS ANY OF THE UNACCEPTABLE CONDITIONS SHOWN IN FIGURE 1 PER THE APPLICABLE MAINTENANCE AND OVERHAUL MANUAL.**



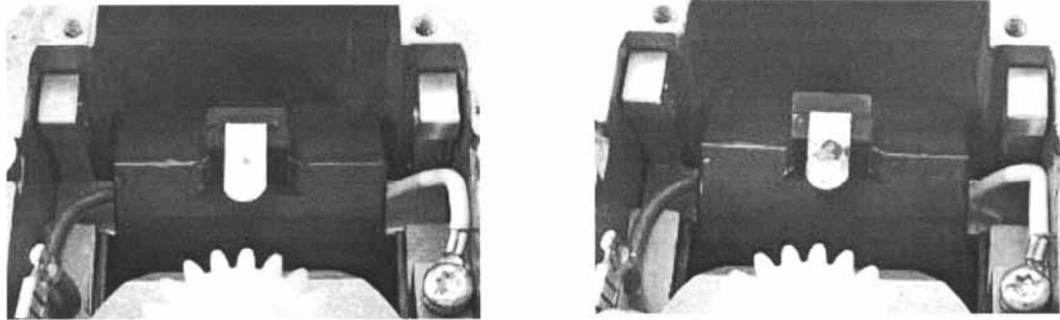
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- Inspect coil tab for carbon residue coating left by carbon brush. See Figure 2. **REPLACE CARBON BRUSH PER THE APPLICABLE MAINTENANCE AND OVERHAUL MANUAL IF SUBSTANTIAL RESIDUE IS FOUND ON COIL TAB.** Use a cotton swab and alcohol to remove residue from coil tab, or replace coil if tab cannot be cleaned. Also inspect high tension coil tab for wear caused by carbon brush. Wear is indicated by a visible depression in the tab. If tab is worn, replace coil.

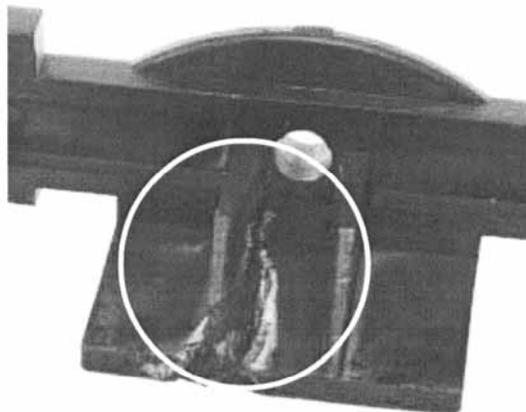


Acceptable

Unacceptable

Evidence of Improper Wear of Carbon Brush
Figure 2

- Inspect bearing bar for evidence of brush residue contamination, burning, or arcing. See Figure 3. **REPLACE DISTRIBUTOR BLOCK ASSEMBLY PER THE APPLICABLE MAINTENANCE AND OVERHAUL MANUAL IF THERE IS ANY EVIDENCE OF ELECTRICAL ARCING OR BURNING.** The new bearing bar can be identified by either the manufacturer-dated packaging, or visually by noting the dams.



Unacceptable
(Developing bearing bar failure)

Bearing Bar
Figure 3

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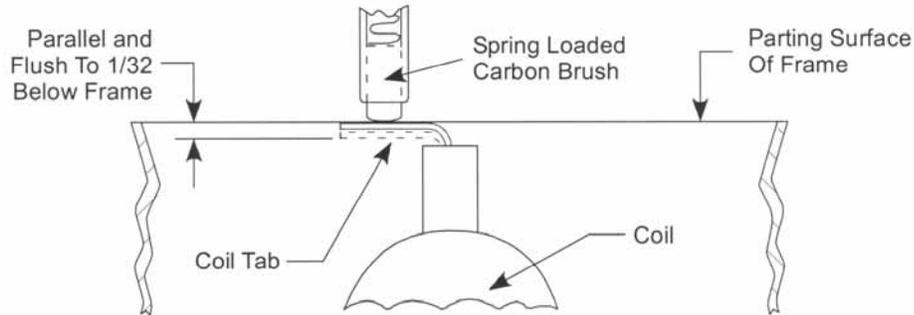
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- If bearing bar does not show evidence of burning or arcing, clean and remove any normal residue per the applicable Maintenance and Overhaul Manual and reassemble into the magneto.

CAUTION: IF THE COIL TAB PROTRUDES ABOVE THE MAGNETO FRAME, IT CAN MAKE DIRECT CONTACT WITH THE DISTRIBUTOR GEAR AXLE AND CAUSE THE MAGNETO TO MALFUNCTION.

- Prior to installing distributor block, make sure coil tab is parallel to and flush with frame mating surface to within 1/32 inch. See Figure 4.



Coil Tab Positioning
Figure 4

- Service Bulletin ending compliance can be documented if existing magneto is replaced by new magneto with serial number 08080454 or later, or if the carbon brush and/or distributor block has been replaced by one manufactured after August 14, 2008, or if the magneto has accumulated 500 hours of engine operating time and has passed the Service Bulletin inspection requirements. Make an appropriate logbook entry.

NOTE: Special provisions have been made with Unison Distributors for replacement kits. Visit www.unisonindustries.com/ourproducts/distributors.html for a list of Unison's authorized distributors.

Unison Piston Products Technical Support Hotline: 904-739-4081

Unison Technical Publications Web-site: www.unisonpubs.com

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