VSP-19 February 20, 1980

To: All Piper Distributors and All Affected Owners

Subject: SLICK ELECTRO, INC. Service Bulletin No. 1-80

Models Affected:	Serial Numbers Affected:
PA-28-161 Warrior II PA-28-181 Archer II	28-7716316 through 28-8016258 28-7790607 through 28-8090242
PA-38-112 Tomahawk	38-78A0001 through 38-80A0051

NOTES:

- 1. The above listed aircraft were manufactured with Slick 4100 or 4200 Series Magnetos. Check Magneto Model and Serial Number (Reference Slick Service Bulletin 1-80, <u>Affected Components</u>) for applicability.
- 2. Some of the above-referenced aircraft were brought into compliance at the factory prior to delivery. Check the Magneto (Reference Slick Service Bulletin 1-80, Checking Procedure, Item C) to determine applicability.

Purpose:

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To distribute the Service Publication identified in <u>Subject</u>, above, to Piper Field Service Facilities and affected aircraft owners.

Detailed instructions relative to compliance action are specified on the attached Service Publication; additional/supplemental data is contained in the following Special Instructions section.

Special Instructions:

After applicable action, make appropriate Logbook entry of compliance with Slick Service Bulletin No. 1-80 and Piper Vendor Service Publication No. VSP-19.



Designers and Manufacturers of Magnetos-Ignition Parts and Precision Equipment... 530 BLACKHAWK PARK AVENUE, ROCKFORD, ILLINOIS 61101 PHONE 815 965-7704 February 4, 1980

SERVICE BULLETIN NO. 1-80

Ref: Airworthiness Directive, Air Mail Letter Dated February 4, 1980

To: All Slick Electro Distributors and Dealers

POTENTIAL SOFT RIVETS ON IMPULSE COUPLINGS

Nature of Problem

Some "impulse coupling hubs", (see attached sheet for part description and location within magneto), for certain magneto models have been assembled with rivets which were not "heat treated". The surface of these rivets is therefore soft; under certain repetitive shock and vibration loading, this could lead to premature impulse coupling failure.

The problem is limited to a small number of magnetos and component impulse couplings whose serial numbers and part numbers are given below. The number of "soft rivets" which could be in the field is believed to be small, but it is necessary to check all magnetos and separate impulse coupling parts to guarantee that all have been located.

Affected Components

All of the following magnetos and impulse couplings must be checked:

447 & 447R 9040001 thru 9040049 M2374 662 & 662R 9020462 to 9070000 M2369	IMPULSE CPLG. NO
662 & 662R 9020462 to 9070000 M2369	
664 & 664R 9040001 thru 9040086 M2370	
680 & 680R 9020462 to 9070000 M2369	
4151 & 4151R 9020017 to 9070000 M1709	
4152 & 4152R 9020017 to 9070000 M1709	
4181 & 4181R 9020017 to 9070000 M1709	
4201 & 4201R 9030001 to 9070000 M3007	

MAGNETO MODEL NO.			SERIAL NO.		IMPULSE CPLG. NO.	
4251	હ	4251R	9030001	to	9070000	M3163
4281	હ	4281R	9030001	to	9070000	M3007
4230	æ	4230R	9040001	thru	9040197	M3068
6210			8090073	to	9070000	M3050
6214			8050001	to	9070000	M3089

Impulse coupling part numbers which also must be checked are:

M2371 M3100 M3165

Impulse couplings in distributor or dealer stock must be file tested following the "Instructions of Compliance".

When to Check

Under the requirements of the Airworthiness Directive all magnetos and impulse couplings MUST BE CHECKED WITHIN THE NEXT 10 HOURS OF FLIGHT OR BY MARCH 5, 1980, WHICHEVER COMES FIRST.

Checking Procedure

Remove magneto assemblies from the engine using the engine manufacturer's instructions. For complete magneto assemblies, remove the "impulse coupling" by using a T-106 Impulse Coupling Puller and following the instructions given in the "Maintenance and Overhaul Instructions", (e.g. Manual F1037 for 4200/6200 Series Magnetos, page 6, paragraphs 3-2 and 3-3).

Once the coupling is removed from the magneto assembly, the rivet heads will be exposed and easy to reach for the hardness test. "Soft rivets" will give up metal easily when stroked with a file; whereas, "hardened rivets" will not.

A. Rivet hardness check:

- 1). Establish hardness reference by sliding the file over either pawl for sound of file on a hardened surface BEFORE stroking rivet head.
- 2). Stroke each of the two rivet heads sharply with the flat surface of a fine cut mill file for same sound.
- 3). If the file does not grab on either rivet or remove material then both rivets have been hardened; and the "impulse coupling" need not be replaced or returned.
- 4). If the file grabs or removes material from only one rivet, then only that rivet is soft; but the "impulse coupling" must still be returned to factory for replacement.
- 5). If the file grabs or removes material from both rivets, then both rivets are soft, and the "impulse coupling" must be returned to the factor for replacement.

IF AFTER USING THIS FILE TEST THERE IS ANY DOUBT WHETHER THE RIVETS IN THE MAGNETO ARE HARD OR SOFT, CALL THE FACTORY REPRESENTATIVE AS NOTED BELOW BEFORE REASSEMBLING THE MAGNETO.

Checking Procedure Cont.

- B. Reassembly of Magneto:
 - 1). Attach the "impulse coupling" to the magneto using the assembly procedure outlined in the "Maintenance and Overhaul Instructions Manual" for the magneto. (Attach the gear where applicable.)
 - 2). Reattach the magneto to the engine using the engine manufacturer's instructions.
 - 3). Time the magneto using the same directions.
- C. Certification of Compliance With This Procedure:

After the magneto impulse coupling has been inspected and found to contain "hard rivets" or after new impulse couplings with hard rivets have been received in exchange for units with "soft rivets", magnetos and couplings should be identified as having been checked for conformity to the hardness specification by:

1). Complete Magnetos:

Stamp the letter "C" on the magneto name plate above the Slick logo or paint a white dot on the magneto frame where it will be visible easily after the magneto is installed.

2). Spare Impulse Couplings: Paint a white strip on the box containing the coupling above the part number identification.

Return of Impulse Couplings to Slick

Impulse couplings found to contain "soft rivets" should be returned to Slick through an authorized distributor for replacement. Authorized distributors should send impulse couplings with "soft rivets" clearly identified as such, with a list of the serial numbers of the magnetos from which they came, (or identified as shelf stock parts), freight prepaid to:

> SLICK ELECTRO, INC. Receiving Entrance 500 Block 18th Avenue Rockford, Illinois 61108

ATTENTION: TOM CULLEN

Other Information:

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For further information, please call:

Tom Cullen Jim Slick Art Johnson

(815) 965-7704

SLICK ELECTRO, INC.

4200/6200 Series Magnetos Dverhaul Instructions

DISASSEMBLY

- 3-1. Magneto disassembly is accomplished in the general order of numbering shown on the Parts Lists. (See pages 12 and 13.)
 - NOTE: Although not required, use of the Slick T100 Assembly and Timing Kit is strongly recommended. The tools contained in this kit will greatly facilitate magneto disassembly/reassembly and help prevent damage to parts.
- 3-2. REMOVE COTTER PIN, NUT (1), WASHER (2) AND GEAR (4200 SERIES MAGNETOS). GRASP SHELL OF IMPULSE COUPLING ASSEMBLY (3) AND GENTLY PULL THE ASSEMBLY OUTWARD TO CLEAR THE UNLATCHING-EARS.

CAUTION: STRONG SPRING TENSION

3-3. ALLOW THE SHELL TO TURN, RELEASING SPRING TENSION, AND WITHDRAW THE SHELL AND COIL SPRING. USING SLICK PULLER T-106 ENGEGED IN THE GROOVES ON THE IMPULSE HUB, PULL THE ASSEMBLY OFF THE SHAFT TAPER.

sufficiently to disconnect the condenser lead at the contact breaker assembly.

- 3-5. Remove two screws (20) and two washers (14). Withdraw and discard bearing bar (21), distributor gear (22) and distributor block (23) from distributor housing (24).
- 3-6. Using two flat blade screwdrivers, or equivalent, placed under the rotor gear (15), gently pry the gear off the rotor shaft and discard.
- 3-7. Remove and discard the contact breaker assembly by removing screw (18) and washer (14). Remove cam by prying straight up with a screwdriver blade and discard.
- 3-8. Remove two screws (13), two washers (14) and two bearing plate clamps (12), Press against the drive end of the rotor shaft (8) and withdraw the rotor, bearing plate (11), loading spring (10) and washer (7) from the drive end frame (5). Place the rotating magnet in a suitable keeper and press the ball bearings off the journals. Discard the ball bearings and washer,
- 3-9. Using coll wedge extractor T122, remove coll wedges (17) and lift out and discard coll (16). Remove air vents (26) and (27), Remove and discard oil seal (4).

