

National Transportation Safety Board

Office of Aviation Safety

Washington, DC 20594



CEN22LA421

MAGNETO EXAMINATION SUMMARY

December 21, 2023

TABLE OF CONTENTS

A. ACCIDENT.....	3
B. MAGNETO EXAMINATION SUMMARY.....	3
C. SUMMARY	3
D. DETAILS OF THE EXAMINATION.....	3
1.0 LEFT MAGNETO EXAMINATION.....	3
2.0 RIGHT MAGNETO EXAMINATION.....	6

A. ACCIDENT

Location: Broomfield, Colorado
Date: 9/14/2022
Time: 1140 mdt
Airplane: Piper PA-28R-180, N3713T

B. MAGNETO EXAMINATION SUMMARY

IIC John Brannen
NTSB
Denver, CO

C. SUMMARY

On September 14, 2022, about 1140 mountain daylight time, a Piper PA-28R-180, N3713T, was substantially damaged when it was involved in an accident near Broomfield, Colorado. The pilot and passenger were not injured. The airplane was operated as a Title 14 *Code of Federal Regulations* Part 91 personal flight.

It was reported that the pilot recently purchased the airplane and had been flying it regularly in the three weeks before the accident. On the accident flight, the airplane departed from runway 16 at the Erie Municipal Airport (EIK), Erie, Colorado, where the airplane was based. When the airplane was about 200 ft above ground level (AGL), the engine power reduced. The pilot reported that although the engine was still running, it was not producing enough power to climb. The pilot executed a forced landing to a residential area where the airplane flipped over, and came to rest in a pond. Both wings sustained substantial damage.

D. DETAILS OF THE EXAMINATION

1.0 Left Magneto Examination

The aircraft magnetos were sent to the NTSB IIC for examination. The left magneto arrived with its impulse coupling removed from the unit and the ignition harness loose in the shipping box.

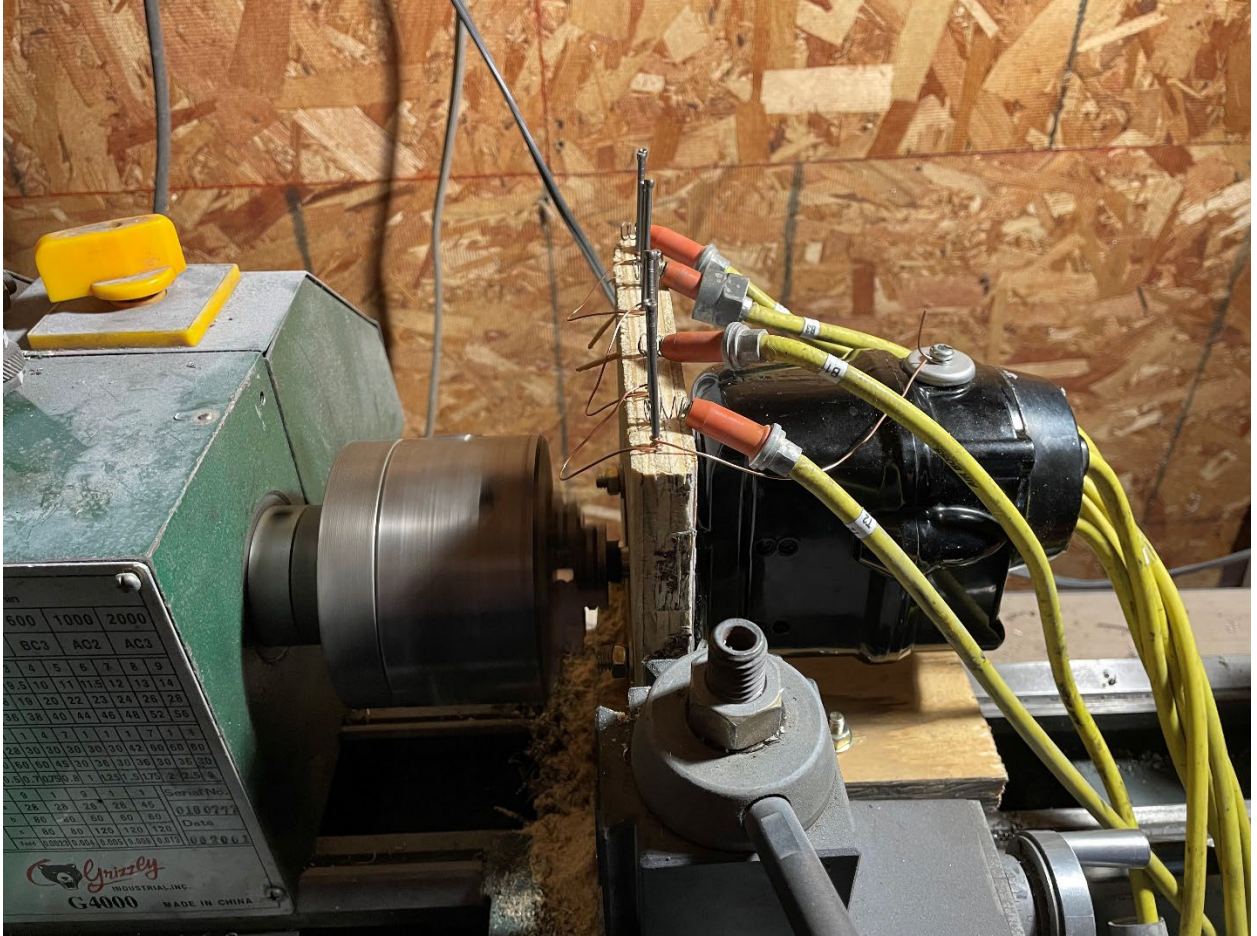


Figure 2: Left magneto installed on test fixture.

The magneto was then disassembled to check the internal components. Upon opening it was observed that the contact points were opening and closing on rotation of the input shaft. The contact point assembly was dirty and rusted. All internal wiring was still connected. Both plastic gears were intact, and the timing of the gears was checked and appeared to be correct. The distributor cap posts and the rotor tip both had extensive pitting. The carbon brush was stuck inside the rotor shaft. The tab on the coil that the carbon brush rides against was dirty and had carbon deposits.

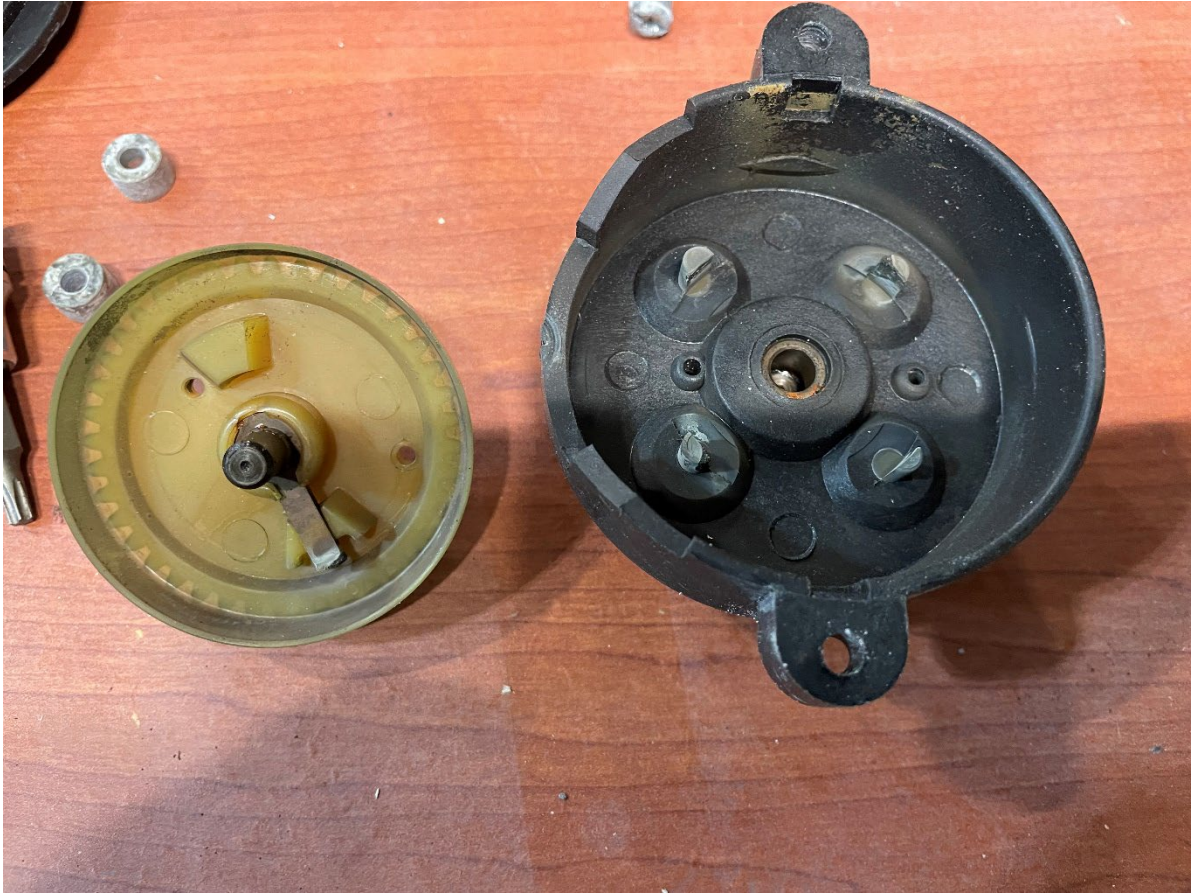


Figure 3: Left magneto distributor cap and rotor.

The contact point tips were cleaned with fine sandpaper, the coil tab was cleaned with a Scotchbrite pad and the unit re-assembled. It was then placed back on the test fixture but no spark was still produced.

2.0 Right Magneto Examination

The right magneto arrived with the input gear installed. The ignition harness was loose in the box. This magneto was not equipped with an impulse coupling. The magneto was installed on the test fixture and run at 400 rpm but did not produce spark. The magneto was disassembled to check the internal components.



Figure 4: Right magneto.

Upon opening it was observed that the contact points were opening and closing on rotation of the input shaft. The contact point assembly was dirty and rusted. All internal wiring was still connected. Both plastic gears were intact, and the timing of the gears was checked and appeared to be correct. The distributor cap posts and the rotor tip both had extensive pitting. The carbon brush was stuck inside the rotor shaft. The tab on the coil that the carbon brush rides against was dirty and had carbon deposits.

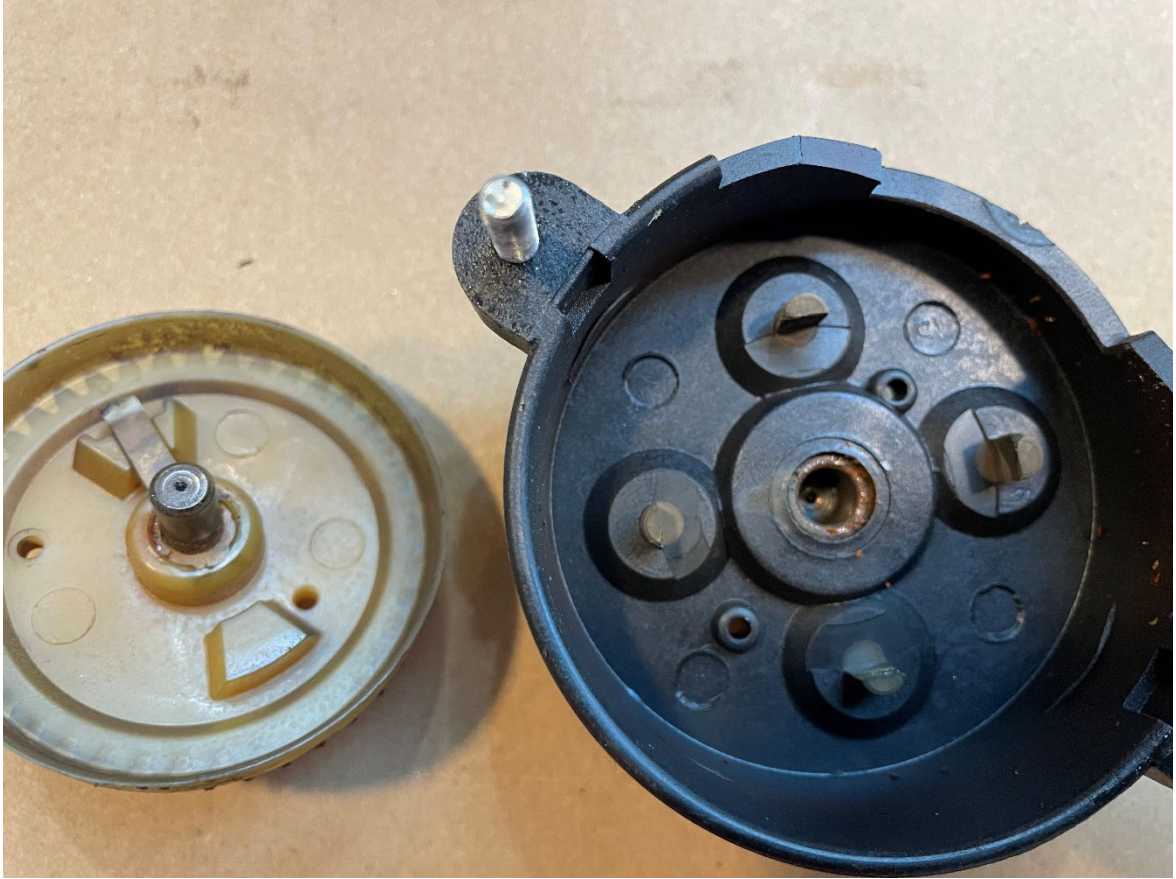


Figure 5: Right magneto distributor cap and rotor.

The contact point tips were cleaned with fine sandpaper, the coil tab was cleaned with a Scotchbrite pad and the unit re-assembled. It was then placed back on the test fixture but no spark was still produced.

Submitted by:

John Brannen
NTSB IIC