



Aaron McCarter
Aviation Accident Investigator
AS

Date: July 7, 2022

Subject: FAA communications (excerpt) regarding exam of airplane

Contact: FAA ASI: Mark Auclair, FAA: John Bell and A&P Mechanic: Brian Shepa

Hi Aaron,

I have attached the pilot statement for your review. Below is the result of the cursory inspection of the engine. Interestingly, the mechanic stated the mags produced sparks when tested, yet there appears to be considerable "wear to the block finger electrodes and rotor electrode". A no spark situation may allow fuel to load in a cylinder and could produce a loud bang when a spark returned. I did let the mechanic know he could move the aircraft but asked that he maintain custody of any parts in question in case you require further inspection.

I will be off tomorrow and will be available next week.

Regards,
Mark

Hi Mark,

As I witnessed Brian Shepa perform the engine inspection he describes below, I can verify that his statements are accurate and factual. There was no obvious discrepancies noted that would have prevented the engine from running, save the possibility of a misfire caused by the erosion noted within both magnetos. Of course, the fuel system and

carburetor were not checked, beyond draining water from the gascolator, as the aircraft had been submerged in the river during the crash. It might be prudent to check the aircraft logs to determine if both magnetos were properly maintained, inspected, and replaced within their recommended total time in service.

John H. Bell

Hi John,

Thank you again for coming out so quickly to assist with the engine for N1927A.

At initial inspection, the engine did not appear to have any obvious discrepancy: failed cylinder assembly, bent push-rod tube housings, cracked case etc.

As instructed, I started by removing spark plugs so that compression could, or could not be determined on all 4 cylinders of the engine. I removed the top plugs and put them in a caddy. I was able to turn the propeller through, by hand, for each cylinder and obtained compression for each. I then removed the bottom plugs and placed them in the plug caddy. There appeared to be no visual, obvious discrepancy with said plugs.

We discussed removing magnetos to help find something more obvious. The engine mount must be swung to one side of centerline, to facilitate room to remove the magnetos for this particular airframe. The gap between the back of the magneto and the firewall is very slim. I removed the R/H, top and bottom engine mount bolts from the firewall side. We had to hold the engine in place by means of securing it by way of ratchet-strap to the left wing tie down hook. Once the engine was secure, I removed each mag and bagged the hardware separately. The magneto drive gears in the accessory case looked intact. The rotor gears in the magnetos looked intact. I hooked up a magneto timer and verified the points were making the timer light go on and off. There was no obvious visual discrepancy with the points. I then proceeded to inspect the block and rotor of each magneto. This is the area I have the most problem with in this whole inspection. I feel that there was appreciable wear to the block finger electrodes and rotor electrode.

Please let me know if you need any other information.

Kind Regards,

Brian Shepa