

Summary of Aircraft Examination

NATIONAL TRANSPORTATION SAFETY BOARD Office of Aviation Safety Washington, DC 20594

SUMMARY OF AIRCRAFT EXAMINATIONS

-- CEN21FA360 --

A. OVERVIEW

On October 7, 2021, about 0654 mountain daylight time, a Piper PA-24, N5585P, was substantially damaged when it was involved in an accident near Northern Colorado Regional Airport (FNL), Fort Collins, Colorado. The pilot and passenger incurred minor injuries. The airplane was operated as a Title 14 *Code of Federal Regulations* Part 91 personal flight.

The pilot reported that after takeoff from Runway 15 at FNL, the airplane was not able to climb normally. The pilot executed a forced landing onto a road, during which the airplane impacted a pole and the left wing was damaged (see Photo 1).



Photo 1 – Airplane at Accident Site (Courtesy of FAA)

B. PARTICIPANTS

Representatives from the FAA, Lycoming and Hartzell participated in a wreckage examination at the recovery location. The airplane's propeller marks on the road at the accident site were also examined.

C. SUMMARY OF EXAMINATIONS

The engine valve covers, and top sparkplugs were removed for the examination. A general inspection was performed of the engine. The spark plugs appeared normal in as compared to the Champion Aviation Check a Plug Chart. The cylinders were borescope inspected and no

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anomalies noted. The crankshaft was rotated by hand and thumb compression was obtained at all cylinders. Engine drive train continuity was established throughout the engine.

Both magnetos remained attached to the engine and showed no visual damage. Spark was observed from all leads when the engine was rotated. Magneto timing was found to be 25°. The oil dipstick showed about 5 ¾ quarts of oil remaining in the engine.

The carburetor remained attached to the engine with no visual damage. The air box was crushed upward. The throttle, mixture, and carb heat cables all remained attached to their respective arms. The fuel inlet screen was found free of debris. The engine driven fuel pump remained attached to the engine case and showed no visual damage. Fuel was sampled and showed no indications of sediment or water. No anomalies were observed during examination of the fuel system and carburetor.

Both propeller blades were bent in the forward/thrust direction with chordwise/rotational scoring on the face side, which was consistent with rotation under power at impact. The propeller mounting was proper and secure with the phenolic shim and there appeared to be no oil leaking from the propeller/engine interface. The propeller piston was removed to inspect the O-ring seal, which was in good condition with no indication that oil was escaping from the piston in a manner that would cause the propeller to move toward the low pitch stop. The propeller governor gasket screen was found free of debris. The propeller governor oil pump shaft and the control arm moved freely.

No evidence of pre-impact mechanical anomalies or malfunction were observed with the aircraft that would have precluded normal operation.

The propeller strike marks showed road wear since the day of the accident but were still discernable (see Photo 2). The distance between the first and second propeller strike marks was about 1.17 ft. Based on the strike marks and the last recorded ADS-B groundspeed of 59 knots, engine speed was estimated to be about 2,554 rpm when the blades contacted the road during the forced landing.



Photo 2 – Propeller Strike Marks on Road at Accident Site (Courtesy of Hartzell)