

National Transportation Safety Board

Office of Aviation Safety

Washington, DC 20594



CEN24LA207

AIRCRAFT EXAMINATION SUMMARY

June 26, 2024

A. ACCIDENT

Location: Aitkin, MN
Date: 06/01/2024
Time: 1227 CDT
Aircraft: Cirrus SR20; N275RS

B. AIRCRAFT EXAMINATION SUMMARY

IIC Aaron Sauer
National Transportation Safety Board
Denver, CO

Participants Peter Hupfer
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Milwaukee, WI

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Jay Ferrell
Continental Motors
Mobile, AL

SUMMARY:

On June 1, 2024, about 1218 central daylight time, a Cirrus SR20 airplane, N275RS, sustained substantial damage when it was involved in an accident near Aitkin, Minnesota. The pilot and a passenger were not injured, and one passenger sustained minor injuries. The airplane was operated as a Title 14 *Code of Federal Regulations* Part 91 personal flight.

AIRCRAFT EXAMINATION:

Initial on-scene examination was completed by a FAA (MSP FSDO) inspector and a Cirrus representative. Postaccident examination of the airframe and engine was conducted at Myers Aviation, Oshkosh, Wisconsin. The examination began with a walk around of the aircraft with multiple photographs taken of the aircraft fuselage,

which was placed on a large cart with four casters. The engine cowling was removed, followed by a visual damage assessment of the firewall forward area. The propeller was damaged on all three blades, which were bent aft between 25 to 40 degrees. The crankshaft was free with multiple full rotations and no issues or anomalies. The engine oil filter was punctured by the nose gear being bent aft, and a replacement filter was installed.

A remote fuel source was connected to the inlet side of the airframe fuel boost pump, and a leak check performed. The fuselage/cart assembly was taken to a safe and suitable area on the ramp and secured. The engine was started using the Cirrus SR-20 POH checklist items for engine start, the engine immediately started, however with the damaged propeller blades, only 1,400 RPM was achieved due to excessive vibration and increased propeller blade angle. Another larger diameter propeller, normally installed on a Beech BE-36, was installed, which had minimal damage (slight aft bend at blade tips), and the functional test process was repeated. The engine was functionally tested through a wide range of RPMs, and immediately went to 2,400 RPM with no hesitation when a simulated quick power increase was initiated.

Following the engine functional test, a compression check was performed using a differential compression test unit. All cylinders were within the manufacturers recommended range as outlined in the Continental maintenance manual. The lower spark plugs were removed for inspection, and compared to the Champion Check A Plug chart, showed a dark appearance, which could be an indication a rich fuel mixture, (which was consistent with high manifold pressure/low RPM as the result of using the accident damaged propeller and the larger diameter and higher low pitch blade stop of the donor propeller, which was used on a IO-520 series, not the accident IO-360 engine). The fuel injector nozzles were removed, inspected, and found to be in need of an ultrasonic cleaning. Engine timing was checked on each magneto and found to be 1-2 degrees advanced of top dead center.

The recovery team noted that they had drained/recovered about 30 gallons of fuel from the aircraft's two fuel cells.

The engine examination and functional test did not reveal any indications or anomalies that would have precluded normal engine operation.