

National Transportation Safety Board

Office of Aviation Safety

Washington, DC 20594



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N1361S - AIRFRAME AND ENGINE EXAMINATION REPORT

December 8, 2021

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A. ACCIDENT

Location: Rushville, Nebraska
Date: August 8, 2021
Time: 1554 Local Time
Airplane: N1361S, Cozy MK IV

B. N1361S - AIRFRAME AND ENGINE EXAMINATION REPORT

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C. DETAILS OF THE EXAMINATION

1.0 Accident Site

The airplane came to rest on an open grass field. The wreckage was recovered to Beegles Aircraft Service in Greeley, Colorado. The airplane was examined on December 8, 2021.

2.0 Airframe Examination (Cozy MK IV, serial number 0074)

All major components of the airframe were accounted for, after the airframe was laid out.

There were no signs of a fire.

Control continuity was established for the airframe.

The BRS Aerospace airframe parachute was disabled before the examination started to prevent injury to the participants.

The left and right fuel tanks were still intact from the accident sequence. The right and left fuel tank caps were found installed.

No signs of fuel were found in the fuel tanks.

Airframe to engine control continuity was established. The control quadrant sustained impact damage and the throttle control cable separated due to impact damage.

The pilot reported to the NTSB IIC after he was called on the telephone, that there were no mechanical issues with the airframe and engine controls up until the loss of engine power occurred.

The cockpit was equipped with two shoulder belt restraints and both restraints were found intact.

The nose wheel was still in the retracted position. The right main landing gear was still attached to the fuselage, however the left main landing gear separated from the impact sequence.

The forward fuselage sustained substantial damage from the impact sequence.

The airbrake (located on the bottom of the fuselage, forward of the engine) was examined, and the power was turned on to test functionality from the cockpit switch. The airbrake would not fully extend. Full extension is about a 45-degree angle downwards away from the fuselage. There is no cockpit indicator showing the status of the airbrake. Impact damage such as scraping was observed on the underside of the airbrake. The actuator rod had play in it when the air brake door was moved by hand. The air brake actuator was removed for further examination.

An MGL Avionics Stratomaster Extreme was removed to download the data.

The airframe records were documented.

3.0 Engine Examination (Lycoming O-360-EXP, serial number L-54149-13E)

The cowling was found separated from the engine.

The engine mount was intact, except one area sustained a crack from the impact sequence.

The cylinders and crankcase all appeared intact.

There were no signs of a fire.

All the engine accessories appeared to be attached to the engine.

The fuel and oil lines appeared to be secure.

The oil level was checked, and it showed 6.5 gallons.

The top and bottom spark plugs were removed for examination. All spark plugs showed normal operations signatures consistent with the Champion Check a Plug chart. The bottom spark plugs were an automotive type.

The crankshaft was able to be rotated by hand with no issues noted. The impulse coupler made a noise when the crankshaft was rotated.

During the crankshaft rotation, all pistons within the cylinders appeared to be moving. The rocker arms on all cylinders for the intake and exhaust appeared to be moving equally. Internal engine continuity was confirmed.

The plastic thrust buttons on the rocker shafts were found melted.

The valves were staked. Thumb compression was felt on cylinders 1, 2, and 3. The cylinder 4 exhaust valve was found sticking.

The cylinders were borescope inspected with no issues noted.

All magneto leads produced a spark when checked. The ignition harness leads were intact.

Engine timing was obtained and showed to be 27 degrees, which is two degrees off.

The air intake system was intact except for the airbox, which was partially crushed.

The exhaust system was intact on both sides. This model does not have internal exhaust baffles installed, just a hollow tube.

The fuel servo was removed for further examination.

This airplane does not have a propeller governor.

The oil tank cap was found intact.

The oil tank was intact.

The oil filter can was removed, and the filter material was cut open. No debris was noticed inside of the filter material.

The fuel injection spider was disassembled, and no anomalies were noted, along with the various fuel injector nozzles.

The number 4-cylinder injector line was found installed about 1 inch above the exhaust tube.

The oil discharge line was found installed right on top of the exhaust tube.

A fuel sample was obtained from the engine in a jar. No signs of water or debris were noted in the fuel sample.

The engine records were documented.

4.0 Propeller Examination (Hertzler Silver Bullet 66X78, serial number P-582)

The propeller was able to be rotated by hand as it was found attached to the crankshaft.

No spinner was installed on the propeller.

The propeller consisted of a two-blade propeller.

The propeller records were documented.

5.0 Maintenance Records Review

The maintenance records were reviewed.

Submitted by:

Michael J. Hodges
Investigator-In-Charge