NATIONAL TRANSPORTATION SAFETY BOARD

Office of Aviation Safety
Central Region

DATE January 14, 2023

Aircraft Examination Summary

CEN23FA077

A. ACCIDENT

Location: Auburn, Nebraska
Date: January 11, 2023
Aircraft: Cessna 150H
NTSB IIC: Michael Folkerts

B. SUMMARY

On January 11, 2023, about 1924 central standard time, a Cessna 150H, N22859, was substantially damaged when it was involved in an accident near Farington Field Airport (K01), Auburn, Nebraska. The flight instructor and student pilot were fatally injured. The airplane was operated as a Title 14 *Code of Federal Regulations* Part 91 instructional flight.

According to automatic dependent surveillance-broadcast (ADS-B) information, the airplane departed Lincoln Airport (LNK), Lincoln, Nebraska, about 1845 and climbed to 3,500 ft mean sea level (msl). About 20 miles northwest of K02, the airplane began a descent and the last ADS-B information showed the airplane about 1.1 miles west of K01 at 105 knots groundspeed and about 1,900 ft msl. No witnesses observed the accident.

Examination of the airframe and engine was conducted at the accident site by the NTSB IIC, FAA personnel, and a Textron party representative. A follow on engine examination occurred at a recovery facility.

C. DETAILS OF THE INVESTIGATION

Accident Site Information

The airplane impacted a farm field without crops while on a southeasterly heading about 1.2 miles south of the Runway 34 threshold at K01. The airplane came to rest upright. A post impact fire did not occur.

The initial impact point included depressions in the field of all three landing gear, with the nose landing gear axle, one bearing, and nose gear steering rods nearby. About 25 ft beyond the initial impact, ground impact marks were observed from both wing tips. The main wreckage came to rest upright about 135 ft southeast of the initial impact point. The nose gear tire was found about 200 ft southeast of the main wreckage.

Dirt and ground debris was embedded on the upper surfaces of both wings that was consistent with both wings contacting the ground while the airplane was inverted. Crushing of the front fuselage (nose area) was consistent with a moderate nose down attitude during impact.

Airframe Examination

All components of the airplane were observed at the impact site, with no indications of a wire strike. The cockpit area of the fuselage was located on top of the aft fuselage. Both wings were attached to main fuselage, with a left wing low and right wing high orientation. The right wing was bent down outboard of the right wing strut. The main landing gear remained to the fuselage.

The fuel selector valve was observed in the 'on' position. The fuel strainer was observed intact on the firefall. The fuel bowl was removed, with fuel observed in the strainer. The fuel strainer screen was observed to be clean. About 2 gallons of fuel were drained from the right tank fuel drain and about 6 gallons of fuel were drained from left tank. Drained fuel from wing tanks and fuel bowl had no indications of water or sediment. Both wing fuel filler caps were observed in place, with mud and ground debris lodged around the caps.

All flight control cables were attached to the respective cockpit input device and the cables were attached to the respective flight control surfaces. The elevator trim tab actuator was measured at 1.2 inch extended, which corresponded to about 2° elevator trim tab up. The cockpit trim indicator was destroyed by impact forces.

All flight controls remained attached at the appropriate location. The wings flaps and wing flap actuator were both observed in the retracted position. The cockpit flap indicator on the doorpost was destroyed during impact and the cockpit switch was observed in the center (neutral) position. No preimpact anomalies were observed with the flight control system.

The throttle lever was observed in a mid-position and the mixture lever was near the full forward (rich) position. The carburetor heat lever was observed in the full forward (off) position. Cabin air and heat controls were both found in a mid-position.

The radio panel was set to 118.05 (#1 radio) and 123.9 (#2 radio). The Comm 1/2 switch was found in the Comm 2 position. The common air traffic frequency (CTAF) for K01 airport was 122.9. All light switches were observed to be in the off position.

The tachometer read 1,600 rpm, with an hour meter 1300.17. The attitude indicator, direction indicator, and turn coordinator were impact damaged. The altimeter read about 500 ft and was set to 29.90 inches.

The ignition switch was observed in the 'both' position and master switch was observed in the 'on' position. The primer was in the locked position, with the knob broken off.

Engine Examination.

Normal mechanical continuity of the engine was observed. The crank and camshaft gear were in time. Adequate oil was observed, with no indications of oil starvation. The oil screen was observed with small carbon flakes.

The carburetor was separated from the intake manifold and found inverted. All engine fuel controls (throttle, mixture, and carburetor heat) were observed to be attached to the carburetor. The carburetor heat flapper (door) was impact damaged and observed in the mid-travel position. The bracket air filter was filled dirt and ground debris.

The carburetor floats appeared to be normal. The carburetor bowl was observed to be empty of fuel and had no contaminants. The carburetor was disassembled to examine the venturi, float, float valve, float hinge, accelerator pump, and nozzle, with no significant anomalies observed. The accelerator pump leather seal was worn, but the carburetor was observed to be in working order.

The propeller was attached to the engine crankshaft. The propeller spinner was crushed aft, with minimal rotational damage. Both propeller blades were bent aft, with minimal rotational scoring or polishing.

The vacuum pump, located on the front of the engine, was separated due to impact with the drive intact. Aft engine accessories (magnetos, starter, and alternator) were observed in the appropriate position. The top spark plugs were removed and observed to have normal wear with a lean condition. The No. 3 spark plug was observed to be finger tight. Ignition harnesses were impact damaged.

The two magnetos were tested and disassembled. Both magnetos were observed to have normal wear and no anomalies were observed with the impulse couplers.