



NATIONAL TRANSPORTATION SAFETY BOARD

Office of Aviation Safety
Washington, D.C. 20594

EXAMINATION SUMMARY

ERA19FA248

A. ACCIDENT

Location: Nebo, North Carolina
Date: August 22, 2020
Time: 1735 EDT
Airplane: Aeronca 11AC, N86002

B. INVESTIGATION PARTICIPANTS

Ralph E. Hicks – Sr ASI
Eastern Region Aviation (ERA)
National Transportation Safety Board
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C. SUMMARY

On August 22, 2020, about 1735 eastern daylight time, N86002, an Aeronca 11AC, was substantially damaged when it was involved in an accident near Nebo, North Carolina. The pilot sustained minor injuries. The airplane was operated as a Title 14 *Code of Federal Regulations* Part 91 personal flight.

The pilot stated that the engine began to run rough and he could smell a strong odor of fuel in the cockpit. He applied carburetor heat and pumped the throttle several times, but to no avail. The pilot was unable to maintain altitude and made a forced landing to a highway, during which time the engine lost total power. After the airplane touched down on the highway it impacted a guardrail resulting in substantial damage to the airframe.

1.0 Wreckage Examination

Airframe and Engine Examination

- The fuselage was pulled into the hangar for examination. The wings were removed during recovery and were not examined.
- The Falcon fixed pitch wooden propeller remained attached to the engine. One blade was intact. The other blade was splintered, and the leading-edge sheathing and blade tip were missing.
- The lower, forward section of the fuselage was structurally damaged. The left main landing gear was broken off. The right main landing gear was pushed up and into the fuselage structure.
- The empennage was generally undamaged. The tailwheel was intact.
- The aft fuel tank was intact and undamaged; no evidence of leaking was noted. The vented fuel cap was secure and undamaged. It was later tested and vented properly. The tank contained fuel. The fuel was drained into a 5-gallon bucket; about 3.5 gallons of fuel were recovered. The fuel was blue in color and smelled of 100LL avgas. The fuel was tested with water finding paste; no water was noted.
- Once emptied, the fuel tank was inspected visually with a flashlight; no anomalies were noted and the finger screen was clean.
- The forward fuel tank was dry. The tank was inspected visually with a flashlight; no anomalies were noted, and the finger screen was clean. Fuel was added to the tank to check for leaks. A considerable fuel leak was immediately observed at the lower left-hand seam of the tank.
- Compressed air was used to check the aircraft fuel lines for obstructions. The copper line from the aft fuel tank to the fuel selector valve (forward of left door frame in cockpit) was unobstructed. The “on-off” fuel selector valve was found in the “off” position. It operated normally when tested with compressed air.
- The copper fuel line from the fuel selector valve to the forward fuel tank was unobstructed. The copper line from the forward fuel tank to the engine firewall/gascolator was unobstructed. The flex line from the gascolator to the carburetor was unobstructed.
- The firewall-mounted gascolator was drained; it contained about 2 oz. of blue-colored fuel and about 0.5 oz. of a water-based fluid, orange in color. There were some dark particulates in the sample.
- The top spark plugs were removed for visual examination; the electrodes showed very light wear and dark color, but not sooted.
- The engine was turned through manually by rotating the propeller; compression and suction were observed on all cylinders (thumb method) and valve action was correct (valve covers were removed).

- The magnetos were removed and tested; all leads on both units produced spark when rotated.
- The ignition harness was undamaged.
- The Stromberg carburetor and airbox were removed. The air cleaner was caked with mud and otherwise unremarkable. The carburetor was partially disassembled. The single brass float was intact and operable. The bowl contained residual, clean fuel. The inlet screen was clean. The venturi and butterfly valve were unremarkable.
- The ELT was found in the off position (not armed).
- The tach time was 1221.13 hours.

The fuel system was configured so that the aft fuel tank gravity fed to the forward tank, through the cockpit fuel selector valve. The forward tank fed directly to the engine without flowing through the fuel selector valve. Therefore, when the fuel selector valve was placed to the on position; it allowed fuel to flow from the aft tank to the forward tank by gravity.