



NATIONAL TRANSPORTATION SAFETY BOARD

Central Region

Denver, Colorado

CEN20LA373

Accident Site

Examination Observers:

FAA Inspector Thomas Kozura

Piper Aircraft Kathryn Whitaker

Following the accident an FAA Inspector and an investigator from Piper Aircraft responded to the accident site. The following was reported by the Piper Investigator:

- A person monitoring the CTAF at IKW reported to the on scene team that the left seat pilot indicated that the aircraft had experienced an engine failure. Shortly thereafter the left seat pilot reported he would be performing a forced landing north of the airport and to “come get him.” The worker reported the pilot’s voice was calm during the statements.
- A member of the fire department that reported to the accident scene indicated that the aircraft’s fuel pumps could be heard operating until a fireman turned the fuel pump switch and battery master off. He also indicated that none of the firemen touched the aircraft’s fuel selector.
- The first identified point of impact was to a barbed wire fence. About 15 ft west of the fence, a dirt mound displayed an area of freshly disturbed earth similar in width to the aircraft’s fuselage. The aircraft came to rest about 50 ft west of the dirt mound. A faint odor similar to AvGas was present at the scene.
- An area of blighted grass was observed around the left wing root extending 10 ft to the southwest. The landowner indicated that the grass was alive before the accident.
- The main wreckage included the empennage, fuselage, both wings, and the engine and propeller assembly.
- The left yoke showed no apparent damage. The right yoke handles were fractured. The aileron cables remained attached to the yoke chain; deformation of the fuselage

precluded determination of aileron cable continuity on-scene. The rudder pedal bar was deformed, but rudder control cable continuity could be established to the rudder. Movement of the yokes also produced corresponding movement of the stabilator, showing stabilator control cable continuity. The floor around the flap handle was disrupted, however the flap handle appeared to be stowed, corresponding to a flaps up position. The flap handle could not be moved.

- The fuel selector remained in place within the cabin floor. The selector handle was observed to be positioned to the right fuel tank. When the fuel selector was removed from the aircraft, fuel was seen to emerge from the fuel line to the left fuel tank; no fuel was seen to emerge from the fuel line to the right tank. The fuel selector handle and shaft end showed no appreciable wear. When tested with light air pressure, the fuel selector functioned as intended, with a tactile detent.
- The aircraft was raised from the ground. The belly of the aircraft was crushed upward and aft, and blue staining was present. The gascolator appeared undamaged and the valve was closed; no fuel was present in the bowl. The gascolator bowl was removed and no contaminants were observed within.
- The left fuel cap remained installed in the left tank filler. A small amount of fuel was observed in the bottom of the bladder. During recovery of the aircraft, fuel was seen streaming from the left wing root. The fuel was collected and tested with Kolor-Kut water finding paste, which did not react to the fuel sample. The fuel bladder inspection panel was removed, and a tear to the inboard end of the left fuel bladder was observed. No fuel staining was noted within the wing root.
- The left aileron remained attached to the wing; it displayed some deformation. The left aileron bellcrank and stops appeared undamaged, and the aileron cables remained attached. The left flap remained attached to the wing and was in the retracted position, with some wrinkling noted.
- The right fuel cap remained installed in the right tank filler. A small amount of fuel was observed on the bottom of the bladder. During recovery, no fuel was observed to spill from the right wing. The right fuel bladder inspection panel was removed, and no damage to the right fuel bladder was observed. No fuel staining was noted within the wing root.
- The right aileron remained attached to the wing and was unremarkable. The right aileron bellcrank and stops appeared undamaged, and the aileron cables remained attached. The right flap remained attached to the wing and was in the retracted position; it was unremarkable.
- The vertical stabilizer and rudder remained attached to the empennage, and no damage was apparent to either. The rudder cables remained attached to the rudder control horn and could be traced to the rudder pedal bar. The rudder stops appeared undamaged.

- The engine remained attached to the fuselage but was displaced aft and downward. The engine cowlings remained in place over the engine and were crushed. The engine appeared grossly intact, with no openings or deformations apparent to the crankcase or cylinders. About 6 quarts of amber colored oil was observed on the oil dipstick. The left Slick magneto was secure on its mounting pad, as was the right Bendix magneto. The nose gear was retracted.
- The carburetor was broken away from the engine oil sump and displaced aft. The carburetor fuel inlet line remained attached to the carburetor. The fuel pressure line nipple was fractured from the carburetor inlet and displayed bright, granular fracture surfaces. The mechanical fuel pump was secure to the engine accessory section and the fuel lines remained connected.
- The electric fuel pumps remained attached to the engine mount and were displaced upward. The fuel pumps appeared undamaged and their fuel lines were secure. The screens were removed from the electric fuel pumps and no blockages were noted. When the screens were removed from the pumps, about 1-2 ounces of fuel was recovered; when tested with Kolor-Kut water finding paste, no reaction to the sample was observed.
- During the recovery of the aircraft, the blighted grass was seen to extend under the left wing root and left forward side of the fuselage. No blighted grass was noted beneath the right wing or right side of the fuselage.

Examination Observers:

FAA Inspector XXX

Lycoming Mike Childers

The airplane wreckage was recovered from the accident site and relocated to AMF Aviation in Springfield, TN. The following was reported by Lycoming.

- The crankshaft was rotated by turning the propeller and continuity of the crankshaft to the rear gears and to the valvetrain was confirmed. Normal valve action was observed from all intake and exhaust valves. Compression and suction were observed from all six cylinders. The interiors of the cylinders were observed using a lighted borescope and no anomalies noted.
- The propeller spinner was impact damaged. All three propeller blades remained attached to the propeller. No damage was noted to the blade marked "A" and it remained secure in the propeller hub. The blade marked "B" was bent aft about 20

degrees at about mid-span and exhibited longitudinal twisting toward the blade face. That blade could be rotated in the hub by hand. The blade marked "C" was bent aft about 80 degrees at about 10 inches outboard of the hub. That blade could also be rotated in the hub by hand.

- The propeller governor remained attached to the engine and no damage was noted. The propeller governor control cable remained attached to the governor control arm. The arm was positioned in amid-range position. The governor oil screen was absent of debris.
- The carburetor was fractured across the throttle bore, separated from the engine and hanging from the fuel hose and control cables. The induction air box and induction air filter were crushed. The throttle, mixture and carb heat control cables remained attached to their respective carburetor and air box control arms. The carburetor throttle control arm was observed about 1/8 inch from the idle speed stop. The mixture control arm was observed in a mid-range position. The carburetor induction air box was crushed and the position of the carburetor heat control arm undetermined. The carburetor was partially disassembled, and no liquid observed in the float bowl. No damage to the black composite floats or other internal components was noted. No liquid drained from the carburetor fuel inlet hose when it was removed. The fuel inlet screen was partially crushed but no debris was observed in the screen.
- The engine driven fuel pump remained attached to the engine and no damage was noted. The pump was removed and no liquid drained from the inlet or outlet hoses when they were removed. No liquid drained from the pump as it was removed and tilted on its side. The pump was partially disassembled, and no damage noted to the rubber diaphragms or internal check valves.
- The spark plug electrodes exhibited gray coloration and worn normal condition.