

Airframe and Engine Examination

The accident site was located about 1,200 feet from the approach end of the runway near the runway centerline. The accident site area was uneven terrain covered by tall grass, shrubs, and trees. The airplane was initially found by rescue personnel nose down with the tail in a nearly vertical position. Pieces of the broken wooden propeller were found at the initial point of impact, which was about 21 ft to the northwest of the main wreckage. The nose and engine compartment of the airplane exhibited crushing and buckling which was consistent with about a 45-degree nose down impact. One of the wooden propeller blades was broken off near the hub and the other blade was splintered along its entire span. The propeller exhibited damage consistent with aft crushing with few rotational signatures. The entire span of the left wing's leading edge was crushed aft. The outboard section of the left wing was broken outboard of the wing strut, crushed, and buckled aft. The right wing was broken at the front spar attach point to the fuselage and was almost twisted off and facing aft. The leading edge of the outboard section of the right wing was crushed and buckled aft. The rear fuselage and empennage remained largely intact. The flight control cables had continuity from the flight control surfaces to the cockpit flight controls. Breaks in the cockpit flight controls were consistent with overload fractures.

The instrument panel and cockpit exhibited extensive impact damage. The throttle was found full forward. The carburetor heat and cabin heat were found full forward. The ignition switch was on BOTH. The engine fuel primer was in the closed and locked position. The mixture control knob was broken off.

The 8-gallon auxiliary fuel tank aft of the cabin had about 2 gallons of fuel. The fuel selector was on the main tank. The main 8-gallon fuel tank was forward of the instrument panel. It was completely broken open and no fuel was found in the tank. The cork float was moist. The inside walls of the fuel tank had a film of dirt contamination sticking to it. The vegetation between the point of impact and the main wreckage exhibited fuel blight.

The throttle, mixture and carburetor heat cables were attached to the engine. The examination of the engine revealed that the cylinder #1 and #3 upper spark plugs were finger tight. The engine was rotated and suction and compression was found on cylinders #1, 2, and 3. Cylinder #4 did not exhibit "thumb" compression due to impact damage, but the piston and valves were moving. Oil was found in the #4 cylinder. The upper spark plugs were in good condition with normal color and round electrodes. The bottom spark plugs were examined and were newer plugs. The #1 plug was normal. The #2 bottom spark plug lead cable was connected but loose. The #3 spark plug gap was tight. It was measured at 0.009 of inch gap.

The left Slick 4333 magneto was still attached to the engine. The impulse coupling operated and spark was observed on all 4 towers. The right Slick 4333 magneto was separated from the

engine. The magneto was rotated and the impulse coupling operated and spark was observed on all 4 towers.

The carburetor was a Stromberg Model MAS3B. Fuel was found in the carburetor. The throttle lever was found full forward. The airbox was crushed by impact forces. The carburetor heat cable was still attached but did not move due to impact damage.

The propeller was a wooden Sensenich propeller.