

HISTORY OF FLIGHT

On July 18, 2016, about 2007 eastern daylight time, an Aeronca 11AC, N85893, sustained substantial damage during impact with terrain after a loss of engine power while in the traffic pattern of a private grass airstrip near Ishpeming, Michigan. The pilot and the pilot-rated passenger received fatal injuries. The airplane was owned and operated by private individuals under the 14 Code of Federal Regulations Part 91 as a personal flight. Visual meteorological conditions prevailed at the time of the flight, which was not on a flight plan. The local flight departed the Edward F. Johnson Airport (M61), Ishpeming, Michigan, located 4 nm south of the accident site, about 1945.

According to the pilot's daughter, she owned the airplane, and her father was the pilot. She reported that she had purchased the airplane from the pilot-rated passenger in June 2015 and was in the process of selling the airplane.

A witness reported that he observed the airplane make a low pass over the grass airstrip. He stated that when the airplane made its left crosswind turn, it "looked mushy." He said that the airplane looked like it was "plowing through the turn." He did not see the accident occur, but he heard the impact. When he arrived at the accident site, the airplane's tail was in the air. The tail lowered when they tried to gain access to the cabin.

A witness located about 800 ft west of the approach end of the grass runway reported that he saw the airplane approaching the airstrip from the southeast. The airplane's flight path and engine sound were normal as the airplane made a low pass over the northeast runway. The airplane turned a left crosswind and appeared to enter a "close-in" traffic pattern on a left downwind at an estimated altitude of 100 to 150 ft above ground level. He stated that the airplane's airspeed seemed slower than normal and he stopped watching the airplane until he heard a change in the engine noise. He stated that the airplane was in a left bank when the engine quit. The airplane immediately went into a left spiral and turned about 360 degrees before impacting the ground.

PERSONNEL INFORMATION

The 49-year-old pilot, who was seated in the right seat, held a private pilot certificate with a single-engine land rating, and he was a certified flight instructor with a sport endorsement for single-engine land airplanes. He held a third class airman medical certificate dated April 4, 2016, with the limitation that he shall possess glasses for near and intermediate vision. During his medical examination, the pilot reported that his total flight time was 750 hours.

The 48-year-old passenger, who was seated in the left seat, held a sport pilot certificate with a single-engine land rating. He did not hold a medical certificate.

AIRCRAFT INFORMATION

The airplane was a single-engine Aeronca 11AC, serial number 11C-277, manufactured in 1946, and equipped with a 65-horsepower Continental Motors A-65-8F engine, serial number 5767568. It seated two and had a maximum gross weight of 1,250 lbs. The empty weight was 782 lbs with a useful load of 468 lbs. The combined weight of the pilot and passenger was 462 lbs. There was 2 gallons (12 lbs) of fuel found in the auxiliary fuel tank and the main fuel tank was breached. The calculated weight and balance indicated that the aircraft was at least 6 lbs over gross weight at the time of the accident.

The carburetor icing probability chart from the Federal Aviation Administration (FAA) Special Airworthiness Information Bulletin (SAIB): CE-09-35 Carburetor Icing Prevention, June 30, 2009, indicated a probability of serious icing at glide power at the temperature and dew point reported at the time of the accident.

METEOROLOGICAL INFORMATION

At 1955, the surface weather observation at the Sawyer International Airport (SAW), Marquette, Michigan, located 13 miles to the northeast of the accident site, was: wind 050 degrees at 8 kts, 10 miles visibility, sky clear, temperature 17 degrees C, dew point 10 degrees C, altimeter 30.17 inches of mercury.

WRECKAGE AND IMPACT INFORMATION

The accident site was located about 1,200 feet from the approach end of the runway aligned with an extended 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 Sensenich 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 was 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 throttle, mixture and carburetor heat cables were found attached to the carburetor and carburetor

air box. 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 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 examination of the engine revealed that the cylinder Nos.1 and 3 upper spark plugs were finger tight. The engine crankshaft was rotated by hand. Suction and compression was produced on cylinders Nos. 1, 2, and 3. Cylinder No. 4 did not exhibit “thumb” compression due to impact damage, but the piston and valves continuity was established. Oil was found in the No.4 cylinder. Drive train continuity was established. The upper spark plugs were in good condition with normal color and round electrodes. The examination of the bottom spark plugs revealed that the No.1 plug was normal. The No. 2 bottom spark plug lead cable was connected, but loose. The No. 3 spark plug gap was measured at 0.009 of inch gap, which typically has a 0.018 – 0.022 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.

MEDICAL AND PATHOLOGICAL INFORMATION

The autopsy of the pilot was performed at the Duke LifePoint Hospital, Marquette, Michigan, on July 19, 2016. The cause of death was from multiple traumatic injuries sustained during an airplane crash. A Forensic Toxicology Fatal Accident Report was prepared by the FAA Civil Aerospace Medical Institute. The results were negative for all substances tested.