

NATIONAL TRANSPORTATIONS SAFETY BOARD
Office of Aviation Safety
Washington, DC 20594

SUMMARY OF AIRCRAFT EXAMINATION

-- CEN19FA022 --

A. ACCIDENT

Location: Broomfield, Colorado
Date: November 2, 2018
Time: 1151 Mountain Daylight Time
Aircraft: N287BM, Mustang II

B. PARTICIPANTS

Jennifer Rodi
Senior Aviation Accident Investigator
National Transportation Safety Board

Troy Helgeson
Senior Air Safety Investigator
Lycoming Engines

Joseph Chavez
Aviation Safety Inspector
Federal Aviation Administration

C. ACCIDENT SUMMARY

On November 2, 2018, about 1151 mountain daylight time, an amateur-built MUSTANG II airplane, N287BM, impacted terrain while on final approach to the Erie Municipal Airport (EIK), near Broomfield, Colorado. The private pilot and passenger were fatally injured. The airplane sustained substantial damage. The airplane was owned and operated by a private individual. The personal flight was conducted under the provisions of Title 14 *Code of Federal Regulations* Part 91. Visual meteorological conditions prevailed and no Federal Aviation Administration (FAA) flight plan had been filed for the flight. The airplane departed EIK about 1055 for a local flight.

D. AIRCRAFT INFORMATION

According to Federal Aviation Administration records, the airplane, an experimental amateur-built Mustang II airplane (serial no. 287), was manufactured by a private individual in 2003. The airplane was powered by a Lycoming O-320 E2A engine (serial

Summary of Aircraft Examination

no. L17730-27A) rated at 150 horsepower at 2,700 rpm. The engine was equipped with a 2-blade Hertzler propeller.

The Hobbs meter read 00874.0 at the time of the accident.

E. DESCRIPTION OF ACCIDENT SITE

The initial impact point was located in an open park vegetated by grass and coniferous trees. The accident site was at an elevation of 5,170 ft msl and the airplane impacted on a magnetic heading of about 330°. The first identified point of contact was a long narrow ground scar about 15 inches at its widest point and 15 ft long oriented on a heading of 330 degrees. This ground scar intersected with a second scar that was 3 ft wide and 7 ft long and 8 inches deep (east/west orientation). The second scar contained pieces of the engine cowling and a fragmented/splintered propeller blade. A third scar intersected with the second and continued 10 ft to the main wreckage.

The main wreckage included the right wing, left wing, instrument panel, fuselage, and empennage. The engine separated from the airplane and came to rest, 18 ft to the north of the main wreckage. The left main landing gear tire separated and came to rest 50 yards north of the main wreckage.

F. DETAILS OF AIRCRAFT EXAMINATIONS

The right wing remained partially attached at the forward wing root. The aft spar was impact damaged and partially separated. The entire leading edge of the right wing exhibited aft accordion crushing. The outboard 22 inches of the wing tip was crushed aft, up, and inboard. The fiberglass tip of the wing separated and was located in the debris field. The right aileron remained attached and right aileron cable continuity was established from the aileron inboard to the flight control sticks in the cabin. The right side of the flap was impact damaged and partially separated. The flap appeared to be extended or down.

The empennage included the horizontal stabilizer, vertical stabilizer, elevator, and rudder. The left horizontal stabilizer was unremarkable. The left elevator was impact damaged, jammed, and difficult to manipulate. The vertical stabilizer and rudder were unremarkable. Rudder cable continuity was confirmed from the rudder control forward to the rudder pedals. The tailwheel remained attached and was unremarkable. The right horizontal stabilizer was unremarkable. The right elevator was impact damaged, jammed, and difficult to manipulate. The outboard tip was bent, and dirt was imbedded in the joint of the stabilizer and elevator. The control tube for the elevator was impact separated at the junction just aft of the cabin. It was continuous from that point forward to the control sticks in the cabin.

The fuselage between the empennage and cabin was impact damaged and wrinkled.

The left wing remained attached to the fuselage. The entire leading edge of the left wing exhibited aft accordion crushing. The fiberglass tip of the wing separated and was located in the debris field. The left aileron remained attached and left aileron cable continuity

Summary of Aircraft Examination

was established from the left aileron inboard to the flight control sticks in the cabin. The left side of the flap was impact damaged. The flap appeared to be extended or down.

The emergency locator transmitter remained attached to the antennae but was selected to the "Off" position.

The instrument panel, which included the flight instruments, engine gauges, and engine controls, was impact damaged. Many of the instruments separated and were impact damage. The engine controls, including the fuel mixture, the engine throttle, and the carburetor, were impact separated from both the instrument panel and the engine and their positions were unreliable.

Both seats were equipped with 4-point harnesses. According to first responders, both assemblies were fastened. The pilot-side harnesses were cut for the purposes of recovery.

The engine came to rest upright adjacent to a tree. One magneto, the carburetor bowl, exhaust and air tubing, and other components separated from the engine and were located in the debris field between the main wreckage and the engine. The engine oil sump was impact damaged and a film of oil covered the engine.

The engine baffles and upper bank of spark plugs were removed to facilitate the examination. One electronic ignition remained attached at the accessory case. The engine was rotated through at propeller blade. Valve train and engine continuity was confirmed, and tactile compression noted on all cylinders.

The magneto was impact damaged and could not be functionally tested. The spark plug leads were impact damaged and could not be functionally tested. The spark plugs exhibited worn signatures when compared to a spark plug chart.

One propeller blade remained attached to the engine at the propeller flange. The tip of the blade was cracked through 4 inches inboard from the tip. The blade was otherwise unremarkable. The other blade separated and was located in the second ground scar, south of the main wreckage.