



NATIONAL TRANSPORTATION SAFETY BOARD

Office of Aviation Safety
Western Pacific Region

December 17, 2020

SUMMARY OF AIRPLANE EXAMINATION

(WPR19FA150)

This document contains 11 embedded photos

A. ACCIDENT

Location:	Melba, Idaho
Date:	May 19, 2019
Aircraft:	Beech C35
NTSB Investigator-in-Charge	Thomas Little

B. EXAMINATION PARTICIPANTS

Thomas Little
Senior Aviation Accident Investigator
National Transportation Safety Board
Federal Way, Washington

Cara Barbera
Aviation Safety Inspector
Federal Aviation Administration
Boise, Idaho

Christopher Lang
Aviation Safety Inspector
Continental Motors
Mobile, Alabama

C. SUMMARY

On May 19, 2019, about 1500 mountain daylight time, a Beech C35, N1888D, was substantially damaged following a loss of control and impact with terrain about 1,150 ft west of the departure end of runway 30, Sunrise Skypark Airport (ID40), Melba, Idaho. The airline transport pilot, the sole occupant, was fatally injured. Visual meteorological conditions prevailed for the proposed local flight, which was being operated in accordance with Title 14 *Code of Federal Regulations* Part 91, and no flight plan was filed. The flight was originating at the time of the accident.

Witness to the accident reported that immediately after takeoff the airplane accelerated, the pilot retracted the landing gear, then pulled the nose up to perform a right aileron barrel roll at the end of the runway. The witness stated that all seemed to be normal, until the airplane had rotated through about 135° of bank, then the roll rate ceased. The airplane then nosed in behind a tree line at about a 45° angle from vertical.

D. DETAILS OF THE EXAMINATION

1.0 Accident Site Examination

A postaccident examination of the accident site on the day following the accident, revealed that a postcrash fire had consumed the forward cabin/cockpit area of the airplane, with the wings and empennage aft of the aft bulkhead having sustained minimal thermal damage, although there was significant structural damage. The engine remained partially attached to the airframe, with one propeller blade unaccounted for. About two months after the accident, the missing propeller blade was located. The NTSB IIC retained custody of the blade, which was sent to the NTSB Materials Laboratory in Washington for examination; the accompanying propeller blade with its hub, was sent to lab previously.

The airplane impacted a goat pasture area on a measured magnetic heading of about 315°. It subsequently came to rest upright in the same pasture on a measured magnetic heading of about 130°. The cabin and cockpit areas of the airplane were consumed by a postcrash fire.

The airplane was recovered to a secured storage facility for further examination.

2.0 Follow-up examination notes

A follow-up layout examination of the airframe and engine was conducted at the facilities of SP Aircraft, Boise, Idaho, on May 21, 2019. The results of the examination revealed the following:

2.0.1 Airframe examination notes

The following airframe examination notes were generated by investigators from the NTSB and the FAA, with onsite assistance provide by the Continental Motors Air Safety Investigator, and remote assistance provided by a Senior Aviation Safety from Textron, based in San Antonio Texas:

- All cockpit instrumentation was destroyed by fire
- The left wing remained attached at the wing root. The inboard 24" of the wing sustained thermal damage, with minimal leading edge damage. The left fuel tip tank was observed with minor damage. The leading edge of the left flap was remained attached to the trailing edge of the wing at all attach points. The flap had sustained minor damage, with no thermal damage noted. The left aileron has become separated from the inboard trailing edge of the wing after having collided with a fence.
- The left fuel tank was not observed, as it was destroyed by post-accident fire.
- The left ruddervator was intact and not damaged.
- The right wing, which was destroyed due to the initial contact with terrain, although remnants of the wing remained partially attached to the wing root. Leading edge impact damage with aft crushing was observed. The right flap remained partially attached to a portion of the wings trailing edge. The right aileron, which remained partially attached to remnants of the wings trailing edge, was bent, and twisted as a result of impact damage. No thermal damage observed.
- The right fuel tank was not observed, as it had been destroyed because of initial impact during the accident sequence, as well as having sustained deformation and thermal damage.
- The right ruddervator was intact and not damaged.

- The empennage aft of the aft cabin bulkhead remained intact, with no thermal damage observed. The fuselage was minimally bent and twisted.
- The nose landing gear was observed to have remained in the retracted position.
- Both main landing gear remained in their respective wheel wells.



Figure 1 - view of airplane looking northwest



Figure 2 - view of airplane looking southeast

2.0.2 Engine examination notes

An examination of the engine was performed on May 21, 2019 at the facilities of SP Aircraft, Boise, Idaho. The results of the examination, according to the Continental Motors field representative who performed the examination, revealed the following:

Report Summary

The examination of the engine revealed no anomalies that would have prevented normal operation and production of horsepower. One propeller blade was not observed in the wreckage and was not located after an extensive search of the area where the accident happened. One of the propeller blade retaining locks was not attached to the hub.

External inspection of engine

The engine had separated from the airframe and had been placed on an engine hoist by recovery personnel. The induction and exhaust systems were impact damaged. All four engine mount legs were fractured. The right-side crankcase had a crack forward and above the number 5 cylinder. The remote oil sump was still attached to the firewall and was crushed.



Figure 3 - photo 1 of engine



Figure 4 - photo 2 of engine

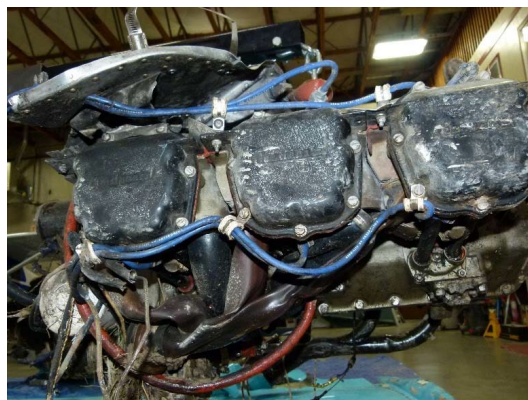


Figure 5 - photo 3 of engine

Inspection of Engine

The top spark plugs were removed, and the electrodes were worn out, normal when compared to the Champion Check a Plug chart. The spark plugs exhibited light and dark colored combustion deposits.

The ignition harness exhibited several cut and frayed ignition leads.

The left magneto remained attached to the engine. The left magneto was removed, and the drive turned freely by hand with impulse coupling engagement observed. The left magneto produced spark on all 6 ignition leads.

The right magneto remained attached to the engine and was removed. The right magneto drive turned freely by hand and the magneto produced spark on all six ignition leads. The right magneto impulse coupling did not engage initially but began engaging after the right magneto drive was turned several times.

The crankshaft was rotated by hand using the propeller and continuity to the accessory gear and throughout the valve train was verified. Thumb compression was obtained on all cylinders except for cylinder 5. Impact damage was observed to the number 5 exhaust valve pushrod tube. During examination of the cylinder combustion chambers with a lighted bore scope, it was noted that the number 5-cylinder impact damaged exhaust push rod tube was preventing the exhaust valve from fully closing. No other anomalies were noted to any of the combustion chambers.

The carburetor had separated from the engine and remained attached to the firewall by the control cables and fuel lines. The carburetor exhibited impact damage which prevented movement of the control arms.

As a result of the engine inspection, no mechanical anomalies were observed that would have precluded normal operation.

Propeller inspection

The two-blade, Beechcraft electric propeller remained attached to the splined crankshaft. One propeller blade was loose in the hub and exhibited leading edge polishing, "S" bending and twisting. The second propeller blade was located three months after the accident about 220 ft east-northeast of the main wreckage. The blade was deformed with the blade twisted and the blade tip bent in the aft direction.

The spinner had been crushed and bent over the hub, partially covering the area of the hub that the missing propeller blade would have normally been. It was noted that one of the two blade retaining locks on the hub was missing and rust was observed where the missing blade

retaining lock would have been. (Refer to the NTSB Materials Laboratory factual report, which is appended to this report, for a detailed examination of the propeller and its blades.)

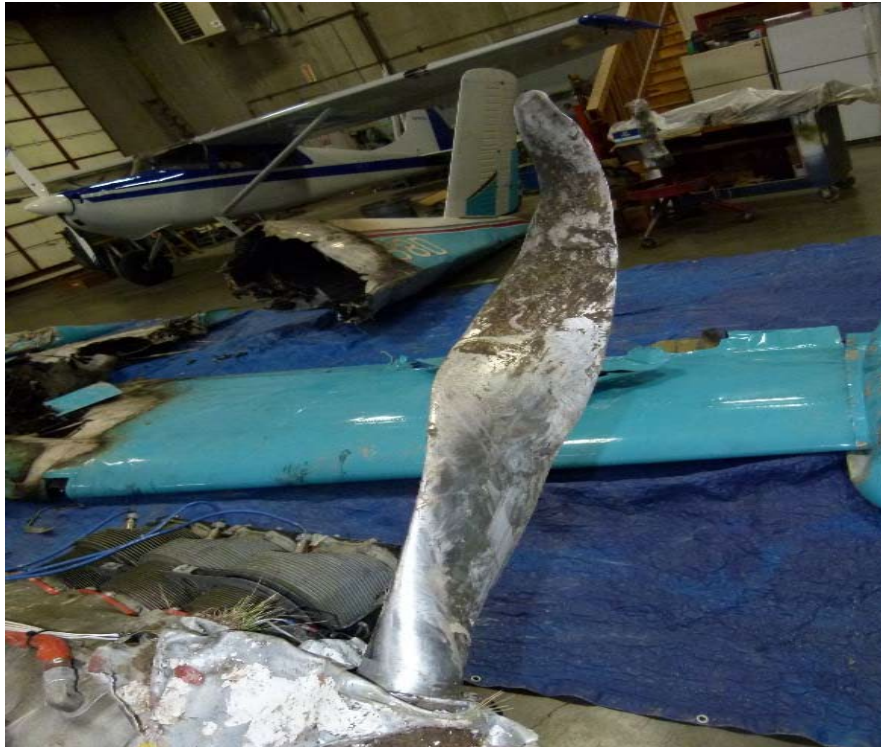


Figure 6 - photo of damaged attached propeller blade



Figure 7 - photo of damaged propeller hub and attached propeller blade



Figure 8 - photo of damaged attached propeller blade



Figure 9 - photo of damaged propeller hub and attached blade



Figure 10 - photo of separated propeller blade



Figure 11 - photo of separated propeller blade