



NATIONAL TRANSPORTATION SAFETY BOARD

Office of Aviation Safety
Western Pacific Region

Date: July 30, 2017

SUMMARY OF AIRPLANE EXAMINATION

(WPR16FA170)

This document contains 22 embedded photos.

A. ACCIDENT

Location:	Clinton, Montana
Date:	August 28. 20-16
Aircraft:	Cessna 182D, N9936T
NTSB Investigator-in-Charge (IIC)	Thomas M. Little

B. EXAMINATION PARTICIPANTS

Robert Radtke
Aviation Safety Inspection
Federal Aviation Administration
Helena, Montana

Andrew Hall
Senior Air Safety Investigator
Textron Aviation
Wichita, Kansas

Chris Lang
Air Safety Investigator
Continental Motors, Inc.
Mobile, Alabama

C. SUMMARY

On August 28, 2016, about 1445 mountain daylight time, a Cessna 182D, N9936T, impacted terrain following a loss of control while attempting to land at the Rock Creek Airport (RCO), Clinton, Montana. The private pilot and the passenger were fatally injured, and the airplane was destroyed. The local personal flight was being operated in accordance with *14 Code of Federal Regulations Part 91*, and a flight plan was not filed. Visual meteorological conditions prevailed for the flight, which departed about 1400 from Missoula International Airport (MSO), Missoula, Montana, with RCO as its destination.

Examination of the accident site indicated that the airplane struck trees that were located about 650 ft west-northwest of the approach end of runway 25 and about 270 ft north of the runway centerline. The airplane came to rest upright on the south shoulder of I-90 on a magnetic heading of about 145°. The airplane was destroyed by thermal and impact damage.

D. DETAILS OF THE EXAMINATION

1.0 Follow-up examination notes

During the course of the investigation, party representatives for Textron Aviation and Continental Motors, Inc., provided the NTSB IIC with notes of their individual examination of the aircraft and engine respectively. The following is a compilation of the reported information provided to the IIC. No anomalies with either the engine or the airframe were noted that would have precluded normal operation.

1.0.1 Airframe examination notes

The airframe was involved in a post-impact fire which consumed most of the fuselage. The right wing leading edge was crushed aft in a curve which was most pronounced approximately mid-span. The left wing leading edge was crushed aft with slightly more crushing at the wing tip. The empennage aft of the baggage compartment was not burned and remained intact.

Flight control cable continuity was established for all flight controls from the cockpit to the control surface attach points. There was a separation of the aileron balance cable which appeared to be a result of a tension overload. The flap handle was found in a "flaps extended" position; however, it was not in a detent so exact flap position could not be determined. The trimmable horizontal stabilizer screw jack was measured at 7.1" which is 3.5° nose down which is the "Take Off" position.

There was accident and fire related damage to the fuel strainer, which compromised the unit. There was some light debris noted on the fuel strainer screen. The glass bowl was observed intact.

Neither magneto was able to generate spark during the engine exam on 08-30-16. The NTSB-IIC retained the magnetos and delivered them to Aircraft Magneto Service in Missoula, MT for analysis. One magneto was able to run normally in all configurations. The other magneto was inoperable due to heat damage.

One of the propeller blades was observed to be bent slightly forward and exhibited leading edge polishing. No damage was observed on the other propeller blade. Both propeller blades remained attached to the hub and the hub remained attached to the crankshaft flange.

1.0.2 Engine examination notes

According to partial copies of logbooks, the engine time since major overhaul was 934.8 hours at the last annual inspection dated 6/22/2016. The previous annual inspection was completed on 6/15/2005 and the engine had only accumulated two hours between the two inspections.

The engine remained partially attached to the airframe and exhibited thermal and impact damage. The induction and exhausted systems were impact damaged and the oil sump was crushed upward. The airframe firewall was wrapped around the rear of the engine.



Figure 1 - photo of engine as received

The exhaust system was crushed upward and the muffler was partially crushed and pushed into the oil sump. The induction system balance tube was crushed into the crankcase. The induction Y was partially separated.



Figure 2 - photo of muffler



Figure 3 - photo of exhaust system

The left magneto was partially separated from the engine at the mounting flange and exhibited impact and thermal damage. The magneto rotated freely by hand but did not produce a spark. Water was observed to be leaking from the magneto. The magneto was taken to magneto repair station by the NTSB for further inspection. According to the NTSB, the left magneto did not function due to thermal damage.



Figure 4 - photo 2 of left magneto



Figure 5 - photo 1 of left magneto

The right magneto was partially separated from the engine at the mounting flange and exhibited impact and thermal damage. The magneto rotated freely by hand but did not produce a spark. Water was observed to be leaking from the magneto. The magneto was taken to magneto repair station by the NTSB for further inspection. According to the NTSB, the right magneto functioned properly producing spark on all terminals.



Figure 6 - photo 1 of right magneto



Figure 7 - photo 2 of right magneto

The exterior of the cylinders exhibited thermal damage. The combustion chambers were examined with a lighted bore scope with no anomalies noted. The crankshaft was rotated by hand using the propeller and continuity throughout the valve train was confirmed as well as thumb compression on all six cylinders.

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



Figure 8 - photo of condition of spark plugs

The carburetor remained attached to the induction wye, and was thermally damaged. The mixture control arm and shaft were bent. The throttle control arm moved with resistance, however, debris from the post impact fire was observed around the throttle plate. The fuel screen was removed and found to be free of debris. The fuel bowl was removed, with thermal damage to all of the interior components observed.



Figure 9 - photo 2 of carburetor



Figure 10 - photo 1 of carburetor

The oil pump was disassembled. The pump housing contained oil and exhibited normal operating signatures and evidence of light particle passage.



Figure 11 - photo 1 of oil pump



Figure 12 - photo 2 of oil pump

The oil cooler remained attached to the engine and exhibited impact and thermal damage.



Figure 13 - photo of oil cooler

The exterior of the cylinders exhibited thermal damage. The combustion chambers were examined with a lighted bore scope with no anomalies noted. The crankshaft was rotated by hand using the propeller and continuity throughout the valve train was confirmed as well as thumb compression on all six cylinders.

Continuity to the accessory gears was established when the crankshaft was rotated by hand using the propeller.



Figure 14 - photo of accessory gears

The starter had broken free from the starter adaptor, with the adaptor observed damaged at the starter mounting flange.



Figure 15 - photo of separated starter

The generator remained attached to the engine and exhibited thermal and impact damage.



Figure 16 - photo of generator

The vacuum pump was removed and disassembled by the Textron investigator and no anomalies were noted.



Figure 17 - photo of vacuum pump

The propeller governor was removed and the drive gear turned freely by hand and oil was noted being discharged. The control arm moved freely by hand from stop to stop.



Figure 18 - photo of propeller governor

The two-bladed propeller remained attached to the crankshaft propeller flange. Blade one was relatively undamaged. Blade two was loose in the hub and bent slightly forward at mid blade and exhibited leading edge polishing and chord wise scratches.



Figure 19 - photo 1 of propeller



Figure 20 - photo 2 of propeller



Figure 21 - photo 3 of propeller



Figure 22 - photo 4 of propeller