



NATIONAL TRANSPORTATION SAFETY BOARD

Office of Aviation Safety Alaska Region

Engine Examination Summary

November 16, 2018

A. Accident

NTSB Number: ANC18LA066

Location: Kaktovik, Alaska (nearest city)

Date: August 21, 2018

Aircraft: Cessna 185, N8041R, S/N 18502098

Engine: Continental IO-520-D, S/N 282791-R, SMOH 541 hours

B. Background

On August 21, 2018, about 1830 Alaska daylight time, a tail-wheel equipped Cessna 185 airplane, N8041R, sustained substantial damage when it was involved in an accident near Kaktovik, Alaska. The airline transport pilot was uninjured. The airplane was operated as a Title 14 *Code of Federal Regulations* Part 91 personal flight.

The pilot stated that he was on a multi-leg trip from Lakewood Airport (78AA) near North Pole, Alaska, to find a hunting camp along the remote Kangakut River. Before the flight, he filled the fuel tanks (total of 84 gallons.) Before the third leg of the trip, he checked the fuel tank levels with a dipstick, and observed about 15 gallons in each tank. At the end of the third leg of the trip, while flying a downwind leg to make an approach to a river gravel bar, the engine lost power and he was forced to make a landing straight ahead. He advanced the throttle to full and confirmed the mixture and propeller controls were in the full forward position. The propeller was windmilling. As he approached the landing surface, he

activated the auxiliary fuel pump and engine power was restored; however, the airplane was too low to recover, and it impacted the brush covered terrain. The main landing gear sheared off and the airplane slid off the riverbank, resulting in substantial damage to the fuselage, left elevator and right lift strut. See figure 1.



Figure 1. N8041R at the accident scene.

The pilot provided photographs of fuel leaking out of the left wing fuel tank vent after the accident and frozen fuel puddling the following day. The airplane was recovered about a week later and neither the NTSB nor FAA traveled to the scene. According to the wreckage recovery crew, there was no fuel in one of the tanks, and the other side was low, with no obvious signs of leakage. No specific quantity or wing tank was recorded, however the recovery crew stated that fuel exhaustion was likely. The remaining fuel was drained for transport. The quantity of fuel that leaked and/or was drained could not be established. See figure 2.



Figure 2. Postaccident left wing fuel leak from vent (source: pilot)

C. Participants in Detailed Examination

NTSB Investigator-in-Charge (IIC)
Dustin Hopkins

Noreen Price
FAA IIC

D. Airframe and Engine Examination

The wings were removed for recovery and storage. On November 15, 2018, the engine was examined and tested at Alaska Claims Services, Wasilla, Alaska. The empennage, wings and doors were previously removed. The airframe and engine were strapped down to a trailer bed. See figure 2.



Figure 3. The airplane post-recovery with the wings, doors, cowling and empennage removed.

The left and right wing fuel caps were secure in place. The wing fuel tank vents were intact and clear of debris. The fuel filter (gascolator) had fuel present and no visible water.

The engine was attached at the airframe mounts and all fuel, hoses, electric lines, and accessories were attached and secure. The propeller blades were damaged in the impact, but the hub was intact and attached to the engine. The ignition harness, ignitors and spark plugs were in place. The intake and exhaust system were intact with minor impact dents to the crossover tube and exhaust shroud. The engine case was intact. The engine crank shaft rotated when the propeller was moved by hand. An airworthy propeller assembly was installed on the airplane to facilitate a test run. A five gallon can of avgas was fed to the right wing root fuel line. The fuel selector valve was rotated through the detents and positive gravity fed fuel flow was observed with the right fuel position was selected. Engine control continuity and functionality was established from the cockpit engine controls to the fuel control. Engine oil was between full and minimum marks on the dip stick. See figure 3.



Figure 4. Continental IO-520 before the test run.

E. Engine Test Run

The outside air temperature was below freezing. The auxiliary fuel pump provided positive fuel flow pressure. The engine started on the third attempt and warmed up at 600 rpm for 5 minutes. The oil temperature was in the low green range and the oil pressure was about 60 psi. The throttle was advanced to 1800 and each magneto was tested. (left- drop 180 rpm, right - drop 100 rpm) The throttle was retarded to idle (600 rpm) with no abnormal indications. The throttle was then rapidly advance to 2300 rpm and back to 1000 rpm three times. The throttle exhibited minor stiffness. Maximum power could not be tested due to the safety risks of the airframe and engine support system. The mixture was retarded to idle cut off, and the engine shut down properly.

F. Summary

The examination and test run revealed no mechanical anomalies that would have prevented normal operation.