



NATIONAL TRANSPORTATION SAFETY BOARD

Office of Aviation Safety
Western Pacific Region

June 15, 2017

WRECKAGE EXAMINATION SUMMARY

WPR17FA108

This document contains 11 embedded images.

A. ACCIDENT

Location: Haines, Alaska
Date: May 27, 2017
Aircraft: N7376Y; Piper PA-30
NTSB Investigator-in-Charge: Andrew Swick

On May 27, 2017, about 1101 Alaska daylight time, a Piper PA-30, a multiengine airplane, N7376Y, collided with the ground shortly after a low-level pass over a remote airstrip at Glacier Point, 12 miles southeast of Haines, Alaska. The private pilot, and a pilot-rated passenger were fatally injured, and a rear-seated passenger sustained serious injuries. The aircraft was registered to the pilot and operated as a personal flight under the provisions of *14 Code of Federal Regulations Part 91*. Visual meteorological conditions prevailed and a flight plan was not filed. The flight originated from Juneau International Airport, Juneau, Alaska, about 1015 and was destined for Haines Airport, Haines, Alaska.

An eyewitness located across Lynn Canal, about 2 miles east of Glacier Point, observed the accident airplane through binoculars, flying northbound at tree top level near the airstrip. He stated the airplane reached the end of the airstrip, descended just before it banked to the right, and subsequently impacted the shoreline in a right wing-down, nose-down attitude. The airplane came to rest near the water's edge about 1/4-mile northeast of the airstrip. The eyewitness and three other people responded to the accident site by boat. About halfway across the canal, when cell coverage was available, the witness called local authorities. The eyewitness stated that the rear-seated passenger was the only occupant that was responsive when they arrived at the accident site. The witnesses reported that impact damage prevented them from extricating the rear-seat occupant from the wreckage. Within minutes, tidal water rose and submerged the airplane. A tractor was brought to the site from a local tour facility, and used to drag the airplane to shallow water. Local authorities arrived shortly thereafter and extricated the rear-seated passenger.

The rear-seated passenger was interviewed by the National Transportation Safety Board (NTSB) investigator-in-charge (IIC), and reported that about 20 minutes into the flight the pilot intentionally shut down the right engine and was demonstrating how to restart the engine during flight. Despite several attempts, the engine would not rotate through with electrical power to start the engine. The pilot then made several attempts to air-start the engine by gaining altitude and diving the airplane down to use airflow to assist in rotating the engine. After two unsuccessful attempts to air-start the engine, the pilot diverted to a remote gravel airstrip at Glacier Point. The witness stated the pilot intended to land at Glacier Point and use a battery booster located in the baggage compartment to start the engine. As the airplane approached the airstrip, the pilot made a low-level pass to check the conditions at the airstrip. He concluded by stating this was his last memories of the flight.

Initial examination of the airplane by the NTSB-IIC and Federal Aviation Administration inspector revealed impact damage consistent with a right wing-down, nose-down airplane attitude during ground impact. The airplane remained intact and all flight control surfaces were accounted for and cable control continuity was attained. The landing gear was in the down

position and the landing gear position switch was also in the down position. The landing disengage motor-raise motor release arm was found in the disengaged position. The emergency landing gear extension handle was removed from its stowed position and installed in a socket on the emergency disengage control. The flaps were in the up position and the flap lever was in the down position. Both engines separated from their respective wing mounts and remained partially attached to the wings by control cables and tubing. The left propeller blades revealed gouging, twisting and material loss of one blade. The right propeller was found in the feathered position with one blade bent rearward; the opposing blade that was unremarkable. The elevator trim actuator was found in the full nose-down position, and the rudder trim indicator was in the nose left position.

The wreckage was recovered for further examination.

B. PARTICIPANTS

Andrew Swick-NTSB IIC
Dennis Hogenson-NTSB
Charlie Little-Piper Aircraft
Mark Platt-Lycoming Engines

C. SUMMARY

Examination of the recovered wreckage was conducted on June 15, 2017 at the facilities of Frontier Freight, Gustavus, Alaska, by the National Transportation Safety Board (NTSB) investigator-in-charge (IIC), Piper Aircraft, and Lycoming Engines. The examination revealed the right engine alternator belt was excessively worn and the left engine alternator belt was not installed.



Figure 1-Main Wreckage

The wreckage was positioned on a flatbed trailer in a secured hangar prior to the examination. Both engines separated from their engine mounts and were positioned on top of the wings and remained attached to their control cables, lines and tubes. The wreckage appeared to remain in the same physical relative arrangement as it was found during the accident site examination.



Figure 2-Right Engine, Alternator Drive Belt

The right engine was removed from the main wreckage by cutting cables, lines and tubes. The cowling was removed from the right engine. The crankshaft propeller flange was bent to one side and the rocker covers had impact damage. The engine's exterior surfaces had a dark oily residue. Oil residue was observed in the area of the alternator pulley and belt. The Lycoming representative opined it appeared the crankshaft oil seal had been leaking over an extended period of time. The number 4 exhaust stack was loose from the cylinder head and only one nut remained loosely attached to the stud. Thermal signatures were present on the cylinder head and cowling, adjacent to the exhaust stack. The lower spark plugs were removed and water drained from a couple of the cylinders. The spark plug electrodes remained free of mechanical damage. The crankshaft rotated by hand and gear continuity was attained from the propeller assembly to the accessory section.



Figure 3-Right Engine Alternator Drive Belt

The alternator was undamaged and secure and no signatures appeared to suggest that the alternator repositioned during the accident sequence. The alternator drive pulley rotated freely by hand, while the drive belt remained stationary with the crankshaft. The alternator drive belt was loose when examined and was removed from the engine. The belt was excessively worn on the pulley contact area. An extra belt was attached to the engine and was removed. The photos provided shows a comparison between the two belts. Both belts share the same part numbers.



Figure 4-Right Engine Alternator Drive Belt



Figure 5-Right Engine Inlet Cowling

The right engine inlet cowling had rubber filings in the forward right interior surface. Rubber filings were also found on the back side of the starter ring gear and surrounding areas.



Figure 6-Left Engine

The left engine was removed from the main wreckage by cutting cables, lines and tubes. The cowling was removed from the left engine. The accessory section and several components had impact damage. The crankshaft propeller flange was bent to one side. The number 4 exhaust stack was loose from the cylinder head. An attachment stud for the number 4 exhaust stack was missing from the cylinder head and no nut was attached to the second attachment stud. Thermal signatures were present on the cylinder head and cowling, adjacent to the exhaust stack. The lower spark plugs were removed and water drained from a couple of the cylinders. The spark plug electrodes remained free of mechanical damage. The crankshaft rotated by hand and gear continuity was attained from the propeller assembly to the accessory section.



Figure 7-Left Engine, Alternator

The alternator was undamaged and secure and no signatures appeared to suggest that the alternator repositioned during the accident sequence. The alternator electrical wiring remained secure at their respective terminals. There was no belt attached to the alternator and no belt recovered from within the confines of the engine cowling. The alternator housing was covered in surface corrosion consistent to being submerged in salt water. The alternator drive pulley forward face had impact damage, bending the edge of the forward face aft, into where the drive belt would be positioned. There was no corresponding damage to the engine cowling in the area of the alternator pulley that would have resulted in damage to the alternator pulley. The alternator drive shaft rotated freely by hand.



Figure 8-Left Engine Alternator Drive Pulley

A dark residue covered the forward side of the alternator and the drive pulley. The belt contact area in the alternator drive belt pulley and the crankshaft pulley was also covered in a dark residue. The subject airplane had been modified with LoPresti front engine cowls. The cowling configuration would not permit visual inspection of the alternator belts during a preflight inspection.

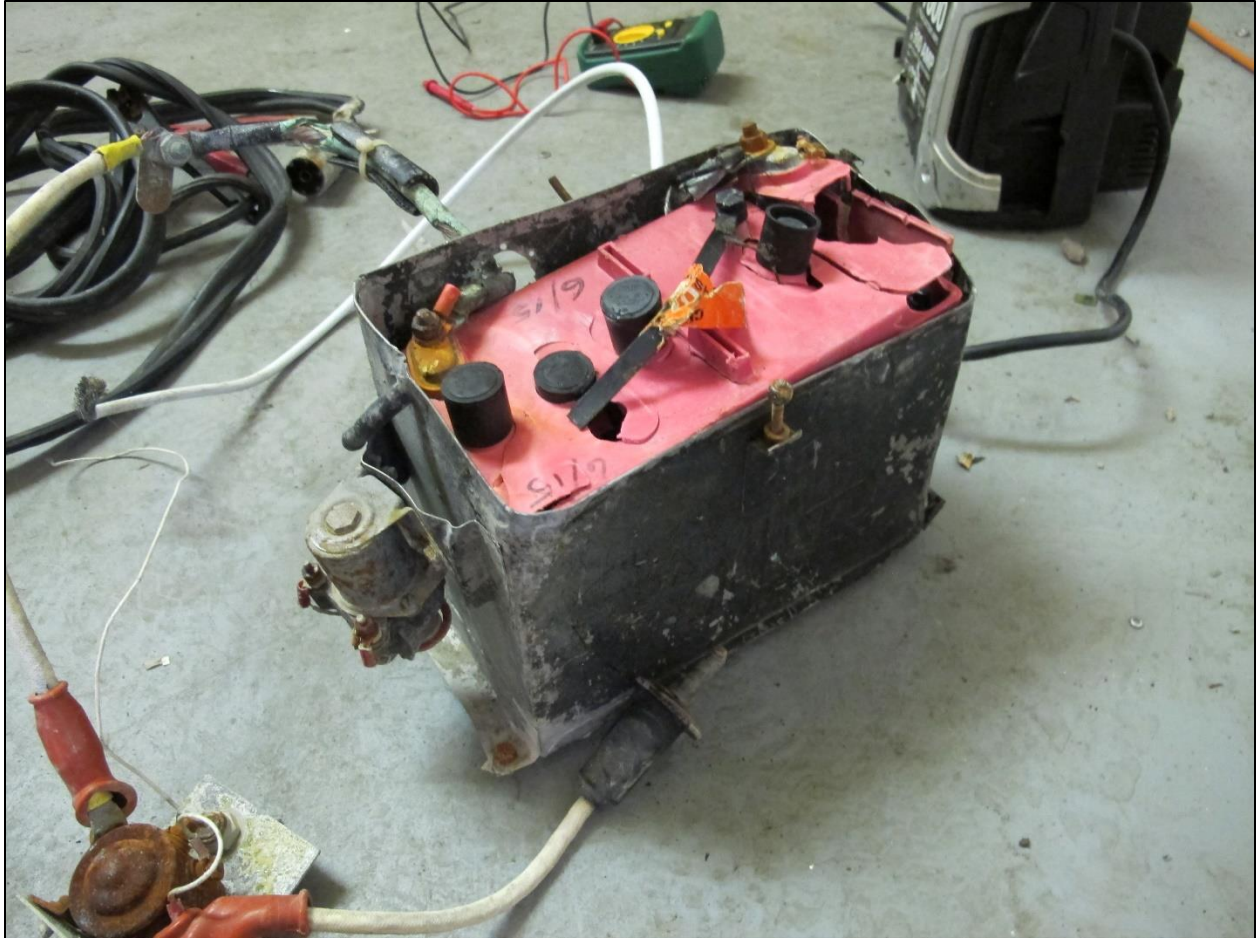


Figure 9-Aircraft Battery

The aircraft battery separated from the main wreckage and remained in the battery case. The battery housing had impact damage revealing internal surfaces. The terminal connections remained attached to the battery. A date of "6/15" was written on the top of the battery.



Figure 10-Amp and Volt Meter

The amp and volt meter was removed from the instrument panel. The amp/volt selection toggle switch was damaged and found in the amp position. The meter reads electrical system bus volts/amps and not individual alternator output.



Figure 11-Alternator Isolation Switches

The alternator isolation switches were found in the “ON” position. There were no annunciator lights or warning system observed which would indicate either alternator had dropped off line during operation.

A multimeter and battery jump-starter unit was found with the wreckage.

Submitted by: Andrew Swick