



NATIONAL TRANSPORTATION SAFETY BOARD

Office of Aviation Safety Alaska Region

On Scene and Examination Summary

August 28, 2018
Anchorage, Alaska

A. Accident

NTSB Number: ANC18LA051
Location: Lake Hood Airport
Date: June 29, 2018
Aircraft: N7675D Piper PA-18-150, 1957, S/N 18-5897
Engine: Lycoming O-320-B2B, S/N L-32397-27A

B. Background

On June 29, 2018, about 1307 Alaska daylight time, a float-equipped Piper PA-18 airplane, N7675D, sustained substantial damage when it was involved in an accident at Lake Hood Seaplane Base (LHD), Anchorage, Alaska. The airline transport pilot sustained minor injuries and the pilot rated passenger was uninjured. The airplane was operated as a Title 14 *Code of Federal Regulations* Part 91 personal flight.

According to the pilot-in-command, who was flying from the rear seat, during the initial climb from the north water lane, about 150 ft above ground level (agl), the engine began to "sputter" and stopped producing sufficient power to climb. He maneuvered the airplane to land on gravel

runway 14 while he "pumped" the throttle and had the passenger check that the fuel selector valve was in the "ON" position. The airplane impacted the grass area between runway 14 and taxiway hotel north of H3. See figure 1.



Figure 1. PA-18 wreckage at the accident scene.

C. Participants in On Scene Examination

NTSB Investigator-in-Charge (IIC)
FAA Aviation Safety Inspector

Noreen Price
Mark Griffin

D. On Scene Observations

Ground scars in the grass and dirt were present along a 100 ft line that crossed the taxiway and a grass area where the airplane came to rest. The airplane came to rest on a heading of about 070° and sustained substantial damage to the fuselage and wings. The airplane was leaning on the right wing. A substantial quantity of fuel was leaking from the left wing root. Impact damage and deformation was evident in the empennage, fuselage, left and right wings. The floats were displaced to the right and rotated about 60 °right of the final heading and exhibited impact damage. The float struts were fractured and deformed. The empennage frame was deformed upward 90° and the wings were bent downward at the roots and upward at the outboard sections. The engine was intact and attached to the airframe. See figure 2.



Figure 2. Lycoming O-320 engine at the accident scene with the cowling removed.

The propeller assembly remained connected to the engine crankshaft. One propeller blade had a rearward curl and slight S bend at the outer 8 inches. It also exhibited leading edge impact damage and scrapes in various directions. The other blade was straight with extensive trailing edge impact damage and dirt and grass dried to the cambered face, indicative of no rotation during impact and damage from dragging during the accident sequence.

The following observations were made in the front cockpit: elevator trim center, throttle 1/3 forward, fuel selector in the Left Fuel On position, master electric switch on, ignition switch off, flap handle up (extended), mixture full out, carb heat full in, tachometer 504.6 hours. See figure 3.



Figure 3. Front cockpit fuel selector in Left Fuel On position and float strut intrusion into the cockpit.

Fuel sample taken from the fuel strainer had characteristics consistent with avgas and indicated negative for water when tested with Sar-Gel paste. A few pieces of small dirt like debris was present. The pilot's private fuel tank system was inspected. The 379 liter tank was opened. No visible presence of water was evident when illuminated with flashlight. The hoses and nozzle were intact; however, the attached nozzle was laying in dirt and grass and had minor debris present on the end. A fuel sample was taken from the nozzle and the fuel had characteristics consistent with avgas. The sample was tested with Sar-Gel paste which resulted in negative presence of water. The system was equipped with one Facet spin on monitor filter with no expiration date visible and two Purolator Micronic filters. It could not be determined when the filter elements were replaced last. See figure 4.



Figure 4. Owner's fuel supply system.

E. Participants in Engine Examination

NTSB Investigator-in-Charge (IIC)
Maintenance Assistance

Noreen Price
Alaska Seaplanes North personnel

F. Engine Examination

Initial examination revealed that engine mounts were in tact and all accessories, fuel and oil lines secure. The airbox below the engine had impact crushing. All induction and exhaust tubes were attached and intact. The propeller was attached and rotated by hand. The wreckage was exposed to rain during the two month period between the accident and the examination.

The ignition harness was intact. Excessive electrical insulating compound was present on the leads. The upper spark plugs (*Champion REM40E*) were removed and examined. Anti-seize compound and corrosion was observed on the spark plug threads, gasket and neck. All indicated dark coloring, with carbon fouling present on 2T, and no gasket present on 4T. The bottom sparkplugs were removed and examined. They each exhibited similar dark appearance as the top sparkplugs, with less corrosion present. Some corrosion may have been due to environmental exposure before the examination. See figure 3.



Figure 2. Top sparkplugs.

Spark could not be produced at the leads when the propeller was rotated. The magnetos were each removed and bench tested with no anomalies noted.

Thumb compressions on all 4 cylinders was successful. The rocker valve covers were removed and oil was present on all rockers. The rockers moved appropriately when the crankshaft was rotated. The cylinders, piston heads and valves exhibited normal wear.

The oil tank level was at 6 qts and the oil was golden yellow in appearance.

The carburetor had throttle, mixture and carb heat attachments in tact and functional. The carburetor was removed and examined. The throttle valve had minor black thermal damage, indicative of a past carburetor fire. There was no fuel present in the carburetor. The finger fuel filter clear of debris. No anomalies noted. See figure 4.



Figure 3. Carburetor.

The airframe fuel strainer was disassembled and a small amount of dirt like debris was present at the bottom of the bowl. The filter had a few small debris pieces. The bowl was full of avgas and had no water present. No fuel was present in the fuel line from the fuel strainer to the engine.

G. Logbooks

A review of the logbooks revealed that the most recent inspection of the airframe, engine and propeller was an annual inspection completed on September 2, 2017. The pilot/owner was a certificated airframe and powerplant mechanic who conducted 100 hour inspections and had an AI complete the annual inspection each year. At the time of the inspection, the tachometer indicated 488 hours and time since major overhaul was 598 hours, total airframe time was 2765.5 hours. No recent maintenance was performed.

H. Summary

The corrosion on the top spark plugs and the failure of spark production at the leads may have been caused by water exposure during the two months after the accident with the engine cowling off. All fuel samples and fuel filters indicated clear with no water present. Other than the lack of fuel from the fuel strainer to the engine and the carburetor carburetor itself, there were no anomalies noted that would preclude normal operation of the engine.