

National Transportation Safety Board

Office of Aviation Safety
Central Region



CEN21LA035

MEMORANDUM OF CONVERSATION

Ramon O. Reyes, FAA Inspector

November 4, 2020

Interviewee: Ramon O. Reyes (FAA Principal Maintenance Inspector)
Date/Time: November 4, 2020 / 1530 CDT
Location: Telephone Call
Investigator: Andrew Todd Fox, NTSB Air Safety Investigator

FAA Inspector Reyes and NTSB Investigator Fox discussed the following:

On the morning of November 4, 2020, Inspector Ramon O. Reyes and Inspector Michael A. Costallos traveled to the accident site and met with the two aviation mechanics with Total Aircraft Services that the NTSB contracted with to conduct a wreckage examination and to test run the engine under the supervision of the Federal Aviation Administration (FAA).

A review of the maintenance documents revealed the following:

Piper PA-28-140, serial number (s/n) 28-7525070
Lycoming O-320-E3D, s/n L-38922-27A

At Accident

Recording Tachometer: 5,295.76 hours
Hobbs Meter: 1,658.50 hours
Airframe Total Time Since New (AFTT): 10,115 hours
Engine Total Time Since New (TTSN): 10,115 hours
Engine Time Since Major Overhaul (SMOH): 2,510.51 hours

Last Annual/100 Hour Inspection (01/10/2020)

Recording Tachometer: 5,228.29 hours
Hobbs Meter: 1,574.3 hours
AFTT: 10,047.53 hours
Engine TTSN: 10,047.53 hours
Engine SMOH: 2,443.04 hours

Examination of the airframe, engine, and propeller revealed the following:

The left-wing leading edge exhibited a large area of impact-related damage about midspan. The fuselage, right wing, and empennage were relatively undamaged. The nose gear separated during impact. The right main landing gear wheel separated during impact. Flight control cable continuity was confirmed for the ailerons, stabilator, and rudder. The flaps were extended 10° and the flap handle was extended 1 notch (10°). FAA Inspector Reyes stated that the Piper PA-28-140 Owner's Handbook required the flaps to be extended 25° for short-field and soft-field takeoffs. NTSB Investigator Fox stated that the flight instructor (Frits J. Van Kooperen) verbally

expressed a concern that the laminated checklist in the airplane indicated that the flaps be extended 10° (1 notch) for a soft-field takeoff.

A visual examination of the engine compartment revealed the firewall was warped, one of the engine mount tubes was cracked, and the nose-wheel-steering control tubes were bent and broken off the nosewheel steering horn. All the fuel and oil lines were found secured and without leaks.

A fuel sample from the gascolator was consistent with 100 low-lead aviation fuel with no evidence of water or particulate contamination. The engine contained ample oil that was light golden in color.

Engine control continuity was confirmed for the throttle, mixture, and carburetor heat controls. All engine controls moved freely between their minimum and maximum stops.

All spark plugs exhibited surface corrosion. The lower spark plug for cylinder No. 1 was noticeably fouled with oil. The remaining spark plugs exhibited features consistent with normal engine operation. Both magnetos provided spark on all leads as the crankshaft was rotated.

Borescope examination of each cylinder did not reveal any anomalies with the cylinders, pistons, valves, or valve seats. Internal engine continuity and valve train continuity were confirmed while the crankshaft was rotated.

Cylinder compression was confirmed by placing a finger over the open spark plug holes and feeling suction and expelled air from each cylinder while the crankshaft was rotated.

Differential cylinder pressure readings were measured three times:

First Compression Check (Cold Engine) #1 30/80, #2 58/80, #3 55/80, #4 30/80
Second Compression Check (Hot Engine) #1 45/80, #2 65/80, #3 64/80, #4 68/80
Third Compression Check (Hot Engine) #1 45/80, #2 63/80, #3 67/80, #4 69/80

The No. 1 cylinder pressure did not increase after the rocker arms were struck with a mallet. It is likely that the cylinder No. 1 rings are worn, resulting in the low cylinder compression readings.

The propeller exhibited impact-related damage. One propeller blade exhibited leading edge damage, chordwise burnishing, and was bent aft about midspan. The other propeller blade remained relatively straight and undamaged. The damaged propeller was replaced to facilitate an engine test run.

The engine was started and run multiple times. The engine could not be run up to maximum static RPM due to a damaged engine mount and the airplane being mounted on jack-stands. There were no mechanical issues observed with the engine operation during the test runs.

The only engine anomalies noted during the examination were the low cylinder compression for cylinder No. 1 and the oil-fouled lower spark plug on cylinder No. 1.