



NATIONAL TRANSPORTATION SAFETY BOARD

Office of Aviation Safety
Western Pacific Region

September 5, 2018

AIRFRAME AND ENGINE EXAMINATION

WPR18FA249

This document contains 7 embedded photos.

A. ACCIDENT

Location: Pacoima, California
Date: September 3, 2018
Aircraft: Cessna 150L, Registration N10789, Serial #15075041
NTSB IIC: Samantha Link

B. EXAMINATION PARTICIPANTS:

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C. SUMMARY

Examination of the airframe and engine was conducted on September 5, 2018 at the facilities of Southwest Aircraft Transportation and Recovery in Chino, California. No anomalies were noted during the examination.

D. DETAILS OF THE INVESTIGATION

1.0 Airframe Examination

- Flight control continuity was established from the control surfaces to the cockpit controls
 - The elevator down cable was fracture separated consistent with overload signatures. All other control cables remained intact.
- The flap actuator was measured, and it was found in the up position
- The elevator trim tab was measured at 1.5 inches of extension, which is the near neutral position

- The aft fuselage was separated from cabin area at fuselage station 95
- A compression buckle was present on the left side of aft fuselage
- The leading edge of both wings were displaced aft to main spar
- The right main landing gear bulkhead was fracture separated
 - o The left main and nose landing gears remained mostly intact.
- The fuel strainer bowl was compromised due to impact damage
 - o Screen was crushed and was damaged with fire extinguishing agent
- The vacuum pump drive was intact
- The ACK Technologies ELT was found installed in the airplane and it was armed
 - o There were no reports of the ELT being activated
- Both seats were present in the airplane
 - o 4-point restraints were installed
 - Both were cut by first responders
 - o The seat backs, feet, and rails were all intact
 - o The right seat control stick was fracture separated
 - o The left seat control stick was still secured in place
- The instrument panel:
 - o All electrical switches were damaged
 - o Airspeed indicator: 0
 - o Altimeter: 700 feet (kollsman window: 29.87)
 - o Turn coordinator: centered, and the ball was to the right
 - o Heading: 050 degrees
 - o Vertical speed indicator: 0
 - o Transponder: squawked 1200, altitude mode
 - o Master switches were broken
 - o Avionics master: on
 - o Hobbs meter: 1543.3
 - o Tach: 4,123.3
 - o Throttle: full forward
 - o Mixture: full rich
 - o Carburetor heat: cold
 - o Primer: in and locked

2.0 Engine Examination

- The engine exhibited heavy crush damage throughout
 - o Number 4 cylinder was fracture separated
 - o The crankshaft was fracture separated near the propeller flange
 - It remained attached to the propeller assembly

- The forward section of the crankcase was damaged and fragmented exposing internal engine components. The damaged opening to the crankcase appeared to be bulged outward.
 - Fire damage was noted to the carburetor, as well as the accessory section of the engine.
- The ignition harness exhibited impact related damage
- The magnetos were removed from their attachment points
 - When rotated by hand spark was produced throughout
- The carburetor was fracture separated, however, partially attached by the mixture cable
 - The inlet screen was clear of debris
 - The bowl was fracture separated and was empty
 - The floats exhibited fire damage
 - One was mostly melted
 - The accelerator pump was found broken and completely separated from the carburetor
 - The mixture lever moved freely by hand, however, the lever was bent due to impact related damage which prevented full travel
 - The throttle lever moved freely by hand, however, the damaged accelerator pump prevented full travel of the lever
- The fuel line to the carburetor was fracture separated at the fitting consistent with impact related damage
- Continuity was visually confirmed throughout the engine
 - The engine could not be rotated by hand due impact related damage to the crankcase
- Oil was observed throughout the engine
 - No thermal discoloration was noted
- All valves appeared normal and the springs were undamaged
- Cylinders were borescoped and they exhibited normal, although slightly rich, operating signatures
 - The piston faces were slightly rich but were otherwise consistent with normal operating signatures.
- Cylinder #2 was removed
 - The connecting rod was bent, however, it remained attached
- The spark plugs were removed and exhibited normal operating signatures
 - The plugs indicated slightly rich
 - The center electrodes exhibited varying degrees of wear
- The oil sump screen could not be examined due to impact related damage to the oil sump

- The oil filter was found fracture separated from the engine.
 - o The oil filter was cut open and there was a small trace of metal fragments in the filter consistent with normal wear and tear.

2.1 Engine Photos



Figure 1: Front of Engine



Figure 2: Accessory Section of Engine



Figure 3: Internal Components



Figure 4: Pistons from Cylinders #2 and #4



Figure 5: Cylinder #2



Figure 6: Carburetor



Figure 7: Spark Plugs

END.

Submitted by: Samantha Link