



NATIONAL TRANSPORTATION SAFETY BOARD

Office of Aviation Safety
Western Pacific Region

January 30, 2018

ONSITE EXAMINATION NOTES

WPR18FA075

A. ACCIDENT

Location: Concord, CA
Date: January 29, 2018
Aircraft: N93316
NTSB IIC: Albert Nixon

B. EXAMINATION PARTICIPANTS:

Albert Nixon
Senior Aviation Accident Investigator
National Transportation Safety Board
Federal Way, WA

Matthew DeSeelhorst
Aviation Safety Inspector
Federal Aviation Administration
Oakland, CA

Mark Platt
Senior Air Safety Investigator
Lycoming Engines
Williamsport, PA

C. SUMMARY

Examination of the airplane wreckage was conducted on January 30, 2018, at the accident site. No evidence of preimpact mechanical failure or malfunction was noted during the examination of the airframe and engine.

D. DETAILS OF THE INVESTIGATION

1.0 WRECKAGE AND IMPACT INFORMATION

The wreckage was located near the Military Ocean Terminal Concord facility, on the Navy Base Realignment and Closure (BRAC), property, at an elevation of about 156 ft mean sea level. The airplane impacted the ground in a near wings levels and about a 45° nose down pitch attitude. The airplane fuselage was oriented on a heading of about 270°.

The first point of impact was an impression in the dirt and asphalt where the three landing gear imprints could be identified. The right wing's impression in the dirt could also be identified. A propeller blade tip was located in the disturbed area of the dirt and asphalt, about 2 inches long, 1 inch wide, and ½ inch in depth, just forward of the gear impressions. From the initial point of impact, the airplane began to skid for about 290 ft. After coming to rest upright, the carburetor, propeller, battery, and a fire extinguisher, separated from the main wreckage and were located

within 50 ft south of it. During the skid, small portions of the windshield and miscellaneous small airplane parts were located on the debris trail. The only exception was the engine cowling, that was located about halfway down the skid trail. Before coming to rest, the airplane narrowly missed striking a power line pole and a road sign.

The airplane's wings remained attached and were angled downward about 45.° Both wing's leading edge sustained substantial damage. The flaps and ailerons were attached. Fuel was observed in both tanks, about several inches in depth, pooled at the leading-edge portion of the tanks. Both fuel caps were examined and were intact. Both flaps were observed in the retracted position. The cabin area was crushed. The empennage appeared to be intact. Flight control continuity was established with the ailerons to the wing root and with the elevators to the aft portion of the cabin. Rudder continuity could not be established. Additionally, due to the impact damage, most of the flight instruments could not be observed.



Figure 1: Airplane wreckage and ground scars as viewed from the left.

Examination of the Lycoming O-235-L2C engine revealed that all engine components and accessories were present, except for the carburetor, which had separated and was located about 30 ft past the main wreckage, to the south. The engine remained partially attached to the airframe. All rocker covers were removed, and the cylinder overhead areas were lubricated and

unremarkable. The crankshaft was rotated by hand, utilizing a tool attached to the rear gear section and rotational continuity was established throughout the engine, accessory section, and valve train. During crankshaft rotation, thumb compression and suction were attained on all cylinders. A borescope inspection of the cylinders revealed evidence of normal operational conditions.

The two-bladed propeller separated from the crankshaft propeller flange with the blades attached. One blade was bent aft and twisted back about mid-span and the other blade had its tip separated from about 2-3 inches. Portions of the blade tip were located near the first point of impact.

The top sparkplugs were removed, and all the spark plug electrodes were normal in color and exhibited normal to worn out wear signatures when compared to the Champion Check-A-Plug comparison chart. The left and right magneto were removed and when rotated by hand, spark was observed on all the respective ignition leads.

The carburetor sustained substantial impact damage and the fuel bowl section had separated. Examination of the carburetor revealed that the fuel bowl was clear of contamination, the main jet was free of obstructions, and the float assembly was destroyed, and left a trail of blue composite float pontoon material along the debris trail. The vacuum pump was intact and removed for examination. The drive shaft was intact, and no anomalies were observed.

The examination of the airplane engine while on-site revealed no evidence of pre-impact mechanical malfunctions or failures that would have precluded normal operation.

Submitted by: Albert Nixon