



NATIONAL TRANSPORTATION SAFETY BOARD
Office of Aviation Safety
Western Pacific Region

March 16-17, 2019

FIELD EXAMINATION

WPR19FA096

This document contains **06** embedded photos

ACCIDENT

Location: Riverside, California
Date: March 16, 2019
Aircraft: Airplane Beech BE-50, N800DC
NTSB IIC: Tealeye Cornejo

EXAMINATION PARTICIPANTS:

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SUMMARY

On March 16, 2019, about 1149 Pacific daylight time, A Beech BE-50 airplane, N800DC, was substantially damaged when it was involved in an accident near Riverside, California. The pilot was fatally injured. The airplane was operated as a Title 14 *Code of Federal Regulations* Part 91 personal flight.

Visual meteorological conditions prevailed for the flight and no flight plan had been filed. However, the pilot received flight following advisories for the flight that originated from Chino Airport (CNO), Chino California, at 1136. The flight was destined for Apple Valley Airport (APV), Apple Valley, California. The CNO airport was about 8 miles northwest of the accident site.

DETAILS OF THE INVESTIGATION



Photo 01 - Overview of Accident Area (GoogleEarth)

Investigators from the NTSB and the FAA accessed the wreckage on March 16. On March 17 the NTSB, the FAA, and party representatives from Textron Aviation and Textron Lycoming Engines accessed the accident site. All major structural components of the airplane were in the backyard of a residence. The airplane came to rest inverted between two trees; the terrain was flat, and the area contained several fruit trees. The GPS coordinates were 33°56.311 N/ 117°29.184 W at an elevation of 784 ft above ground level (agl). The debris path was along a 050° magnetic heading.

The first identified point of contact (FIPC) was a swing set in the northeast corner of backyard. The top metal bar had a depression in it, as well as paint similar to the airplane embedded in the top of the brace, and the bottom of the plastic slide was broken. The debris path was short and compact with a total length of about 25 feet. There was wing impression near the slide that extended out toward the main wreckage. Green colored lens was identified in the impression.



Photo 02 - Accident Site (NTSB)



Photo 03 - Debris Path (NTSB)



Photo 04 - Propeller Blade Strike (NTSB)

Flight control continuity was established for all three primary flight control surfaces from the flight surfaces to the cockpit. Flaps were in the up position.

Fuel was present at the accident site; all fuel tanks had been breached. The fuel valves were removed from each wing and tested; both valves functioned properly. Both the left fuel valve and the right fuel valve were found in between the cross feed and main tank positions; both handles were in the cross-feed position. The left fuel strainer had a small amount of debris in the screen. The right fuel strainer screen was free of debris.

Both engines remained attached to their respective wings. The right engine was detached and hanging from its cables. It came to rest on the top side of the wing. The

left engine left a ground impression in the debris path about 10 ft in length. At its final resting position, the engine was partially buried in the ground.

Each engine was equipped with a 3-bladed Hartzell propeller. All 3 blades separated from the right engine. Two of the 3 propeller blades separated from the left engine. Several tree branches appeared to have been cut by the propeller blades. Near the impact crater for the right engine was an impact mark consistent with a propeller blade.

The bottom spark plugs for the right engine were removed, according to the Aviation Champion Spark Plug check-a-plug chart AV-27, the spark plugs electrodes displayed coloration consistent with normal operation.



Photo 5 - Bottom Spark Plugs Right Engine (Photo Courtesy of Lycoming)

The top spark plugs for the left engine were removed, according to the Aviation Champion Spark Plug check-a-plug chart AV-27, the spark plugs electrodes displayed coloration consistent with normal operation.



Photo 06 - Top Spark Plugs Left Engine (Photo Courtesy of Lycoming)

left engine

All fuel lines in the engine compartment were in place and secured at their respective fittings for each fuel system component. The carburetor was displaced because of impact forces. A portion of the carburetor remained attached to its mounting pad and was secure; fracture surface was consistent with an overload event. The throttle and mixture controls were secure and remained attached to their respective control arms at the carburetor.

The fuel pump did not have a data plate and was displaced from the engine; a portion of the mounting flange was secure at the mounting pad and fracture surfaces consistent with overload. The fuel inlet and outlet lines were secure at their respective fittings. The drive had broken; however, manual rotation of the drive was free of binding.

The ignition harness was damaged to varying degrees and was not tested. The ignition harness remained attached to each magneto and respective spark plugs.

The starter was destroyed.

The alternator remained secure at its mounting pad and the alternator drive was intact.

The vacuum pump was displaced from the engine at the mounting pad. Fracture surfaces consistent with overload and the drive was free to rotate by hand.

The oil filter was damaged to the point here the pleated filament was exposed. The suction screen remained secure at its mounting area. There was no evidence of a pre accident metal contamination in the filter or suction screen.

All three propeller blades separated from the propeller hub at their respective sockets. For the purposes of this report the blades were marked LA, LB, LC. The propeller governor remained secure at its mounting pad.

Blade LA exhibited bending along its length with chordwise striations and leading-edge nicks.

Blade LB exhibited leading-edge damage, torsional twisting, and chordwise scratching across the cambered surface and trailing-edge S-bending.

Blade LC exhibited leading-edge damage, torsional twisting, and chordwise striations across the cambered side and trailing-edge S-bending.

Right Engine

There was no evidence of a pre impact mechanical malfunction or fire.

The right engine compartment fuel lines were secure at their respective fittings. The carburetor was displaced from the engine with the fracture surfaces consistent with overload. The throttle and mixture controls remained securely attached at their respective control arms at the carburetor. As a result of the impact, the carburetor could damage, which made it unsuitable for testing.

The fuel pump was displaced from the engine; a portion of mounting flange remained secure at the mounting pad, and the fracture surfaces were consistent with overload. The fuel inlet and outlet lines remained secure at their respective fittings and the drive of the fuel pump rotated by hand without any binding.

The starter, and alternator were destroyed by impact forces and not tested. The vacuum pump separated from its mounting pad at the engine and the fracture surfaces were consistent with overload.

The oil filter and suction screen were removed with no evidence of debris in the suction screen nor was it damaged. The oil filter was cut open and the filament exposed with no evidence of metal contamination.

The engine came to rest inverted and under the main wreckage. All three propeller blades separated from its hub and located near the initial impact crater. All 3 blades were intact and were labeled RA, RB, RC for the purposes of this report.

Blade RA had diagonal chordwise striations as well as leading-edge nicks. The blade had some aft bending.

Blades RB and RC had some chordwise striations present near the root end of the blade and slight forward bending.

The left magneto remained attached to its mounting pad on the engine. The right magneto had separated from its mounting pad and was damaged. The engine oil sump had separated and exposed the crankcase and accessory case; no mechanical malfunctions were observed.

PERSONNEL INFORMATION

Pilot-in-Command (PIC)

The ■-yr old pilot held an Airline Transport Pilot Certificate (■) with a multiengine land rating, along with private pilot privileges for airplane single engine land. On his most recent FAA medical exam dated June 28, 2018, he reported a total flight time of 3,127 total hours and 0 hours in the past six months. The pilot held a third-class medical that was not valid after June 30, 2019. The medical certificate held the following limitation: must wear lenses for distant, have glasses

The pilot's personal logbooks were reviewed. He received his Airline Transport certificate on June 5, 2011. The last pilot logbook entry dated August 27, 2018, reported a total time of 3,155.2 total hours. The pilot recorded his flight time in the accident airplane from the period of January 14, 2017, through August 27, 2018; the estimated total time as identified in the pilot's logbook was 53.0 hours. There was no flight time listed for 2019. The pilot further recorded his biannual flight review as July 14, 2018.

AIRPLANE INFORMATION

The accident airplane, Beech BE-50 airplane (serial number DH-120) was manufactured in 1956 and was powered by two Lycoming GO-480-G2D6.

A review of the maintenance records for the airplane revealed that the last annual inspection was performed on December 12, 2018. The Hobbs time was recorded as 763.2

Submitted by: T. Cornejo