



NATIONAL TRANSPORTATION SAFETY BOARD

Office of Aviation Safety
Western Pacific Region

July 6, 2017

WRECKAGE EXAMINATION SUMMARY

WPR17LA136

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A. ACCIDENT

Location: Santa Ana, California
Date: June 30, 2017
Aircraft: N87297; Cessna 310R
NTSB Investigator-in-Charge: Andrew Swick

On June 30, 2017, about 0935 Pacific daylight time, a Cessna 310R multi-engine airplane, N87297, collided with the freeway following a loss of right engine power shortly after departing from the John Wayne-Orange County Airport, Santa Ana, California. The private pilot, and passenger sustained serious injuries. The aircraft was registered to Twin Props 87297, LLC., and operated by the pilot under the provisions of *14 Code of Federal Regulations Part 91* as a personal flight. Visual meteorological conditions prevailed and a flight plan was not filed. The flight was destined for Phoenix Deer Valley Airport, Deer Valley, Arizona.

A witness located in a car heading northwest on the freeway captured the accident airplane in flight and subsequent impact sequence on video. The airplane was first observed in a right-wing low, 45-degree bank, in a slightly nose high attitude descending towards the freeway from the north. The wings leveled as the airplane crossed over the freeway about 20 feet above ground level. After losing sight of the airplane momentarily, the video continued with the airplane impacting the center median divide and opposing lane, followed by fuel spray and subsequent explosions.

Several eyewitnesses that saw the airplane approaching from the northwest initiating a right turn, when it suddenly lost altitude. A couple of the witnesses stated that the airplane banked left just prior to impacting the ground.

According to local radar and air traffic control (ATC) communications, the airplane departed runway 20R, and was over the departure end of the runway when the pilot announced a mayday and entered the right traffic pattern. ATC replied by clearing the airplane to land on runway 20R. The airplane continued on the downwind leg of the traffic pattern and ATC informed the pilot that his landing gear was retracted. The pilot replied by stating he would put the gear down on final. The airplane was near the end of the downwind leg of the traffic pattern when the pilot stated that he lost the right engine. The radar track continued to show him turning right for the final approach and the last radar returns from the flight track were near the accident site.

According to the FAA inspector onsite, the debris field was about 150 feet long, crossing over both the north and south-bound lanes. Impact marks and soot were found on the center median K-bar, and continued diagonally across the southbound lane to the K-bar on the edge of the freeway. The left-wing tip tank and left main landing gear were found further down the debris field in the northbound lane. The left elevator and right-wing tip tank were found on the southbound lane. About 100 feet down the debris field in the southbound lane was the main wreckage. The main wreckage was partially consumed by fire and both engines and propellers remained attached. The horizontal stabilizer separated from the wreckage and was found further down the debris field. Airplane parts impacted several moving vehicles and one truck was impacted by the main wreckage.

The wreckage was recovered to a secure location for further examination.

B. PARTICIPANTS

Andrew Swick-NTSB IIC
Sean Houlihan-FAA IIC
Kenneth Collie-FAA
Andrew Hall-Textron Aviation
Nicole Charnon-Continental Motors Group

C. SUMMARY

Examination of the recovered wreckage was conducted on July 6, 2017 at the facilities of South West Aircraft Transportation and Recovery, in Chino, California, by the National Transportation Safety Board (NTSB) investigator-in-charge (IIC), Federal Aviation Administration (FAA), Textron Aviation and Continental Motors Group. The examination revealed no evidence of any preimpact mechanical malfunctions or failures that would have precluded normal operation.

The wreckage positioned in a hangar for the examination. Both wings were removed from the fuselage and both engines were removed from their mounts prior to the examination. The baggage was weighed and the personal belongings were removed from the wreckage. The forward fuselage had impact and thermal damage and the nose was canted to the left and crushed on its right side. The forward luggage area had thermal damage and had two seats of headsets and a starter motor.

The cabin area remained intact with impact damage to the forward window posts and thermal damage to the forward left side and ceiling. The instrument panel and throttle quadrant remained intact and undamaged. The pilot and copilot seats were undamaged and remained attached to floor rails. The seatbelt restraints which includes shoulder harnesses were intact and found unbuckled. The aft cabin fuselage area was buckled.

The left and right fuel selector valve handles were found in the main and auxiliary positions, respectively. The left and right fuel selector valves, located in the wings, were found in the 'main' and pulled past the 'off stop' position. According to the Textron Aviation, as a result of the right wing impact damage during the accident sequence, the fuel valve cable from the selector valve handle to the fuel valve was likely pulled; positioning the valve to the 'off stop' position. All fuel caps were found and the filler necks were installed with restrictor orifices.

The landing gear was confirmed in the down position by examining the landing gear actuator. The flaps were found in the 15-degree down position. The chain drive was found in the 15-degree down position. The FAA inspector, while on-site, confirmed the flap handle and indicator was at the 15-degree position.

The rudder remained attached lower and middle attach points and the top half was bent down to the right side. The horizontal stabilizer separated from the empennage. Cable control continuity was established to the tail section.

The JPI EDM 760 instrument was removed from the instrument panel and retained for data download.

Both wing tip tanks separated from the wings. The tip tanks were found in several sections. The right wing had impact and thermal damage. About 5 feet of the wing tip separated from the wing. The leading edge was crushed from the wing root to the separated tip area. The left wing had impact and thermal damage. About 1 foot of the wing tip structure separated from the wing. The left aileron separated from the wing, leaving the inboard structure attached to the aileron turnbuckle. Left aileron cable continuity was confirmed from the wing root to the remaining aileron structure. The right aileron, aileron turnbuckle and surrounding structure separated from the right wing. Right aileron cable continuity was confirmed through impact damaged cables.

The inboard horizontal stabilizer and inboard elevator structure remained attached. Both outboard horizontal stabilizer and elevator outboard structures separated and was identified.

Fuel that was consistent with 100LL was identified in a line attached to the left wing tip tank.

As per CMG:

The right engine

The engine sustained impact-related damage to the #5 cylinder and thermal damage to the flexible fuel lines and ignition leads. However, examination of the fuel system components revealed no pre-accident anomalies. The ignition system revealed no pre-accident anomalies, though the magnetos were sent for functional testing. Examination of the core engine components revealed no signs of operational distress with crankshaft and camshaft continuity being confirmed at each cylinder through a thumb compression tests. Borescope examination of the cylinders revealed no pre-accident anomalies with the barrels, pistons, valves and valve seats.

The magnetos were sent to Continental Motors where they were tested/examined in more detail under the supervision of a NTSB investigator (see Appendix A of this report for the findings from that examination). The engine data monitor (JPI 760) was sent to an NTSB investigator for data download. The propeller will be examined by the manufacturer under the supervision of the NTSB or FAA at a later date.

The left engine

The engine sustained thermal damage that destroyed the flexible fuel lines and ignition leads. The thermal damage was extensive enough to prevent functional testing of the fuel system components. However, examination of the fuel system components revealed no pre-accident anomalies. The ignition system revealed no pre-accident anomalies, though the magnetos were

sent for functional testing. Examination of the core engine components revealed no signs of operational distress with crankshaft and camshaft continuity being confirmed at each cylinder through a thumb compression tests. Borescope examination of the cylinders revealed no preaccident anomalies with the cylinder barrels, pistons, valves and valve seats.

The magnetos were sent to Continental Motors where they were tested/examined in more detail under the supervision of a NTSB investigator (see Appendix A of this report for the findings from that examination). The engine data monitor (JPI 760) was sent to an NTSB investigator for data download. The propeller will be examined by the manufacturer under the supervision of the NTSB or FAA at a later date.

Propeller Assemblies

The propeller assemblies had impact damage and were removed for further examination. One blade tip separated from the right engine.

Submitted by: Andrew Swick