



NATIONAL TRANSPORTATION SAFETY BOARD

Office of Aviation Safety

Central Region

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AIRFRAME AND ENGINE EXAMINATION

CEN18LA229

(3 pages)

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B. SUMMARY

On June 17, 2018, at 0830 central daylight time, a Cessna T210F airplane, N6107R, nosed over during an off airport forced landing in Desdemona, Texas. The private pilot and one passenger received minor injuries, and another passenger was seriously injured. The airplane was substantially damaged. The airplane was registered to and operated by the pilot as a personal flight under the provisions of Title 14 Code of Federal Regulations Part 91. Visual meteorological conditions existed near the accident site at the time of the accident, and a flight plan had not been filed for the flight. The airplane departed the Dublin Municipal Airport (9F0), Dublin, Texas, about 0820, en route to the Gregory M. Simmons Memorial Airport (GZN), Cisco, Texas.

C. DETAILS OF THE INVESTIGATION

1.0 Airframe Examination

The wreckage was initially examined at Air Salvage of Dallas (ASOD) on September 11, 2018. The wings and horizontal stabilizer were removed during the wreckage retrieval. The nose gear and right main gear were separated from the fuselage during the accident sequence. The lower fuselage sustained compression damage. The aft cabin floor was crushed upward, and the right forward leg of the aft seat was separated from the base. The empennage was bent downward aft of the aft bulkhead. The top of the rudder and vertical stabilizer were crushed. Flight control continuity was established at the cockpit and at the flight controls. The fuel strainer contained fuel which was clean and free of water.

2.0 Engine Examination

The engine, a Continental TSIO-520, serial number 140010-5-C, remained attached to the airframe. Various wires, cables, and hoses remained attached to the engine. The top spark plugs were removed. The plugs exhibited normal wear. The plugs were dark in color and oily. The cylinders were examined using a boroscope. Nothing remarkable was noted.

The engine was then removed from the airframe and shipped to Continental Motors for a test run. On November 6, 2018, the engine was prepared for the test cell.

The propeller governor, intake tube on the No. 6 cylinder, one of the front engine mount leg, and the pre-oiler were removed to prepare the engine for the test run. The slave components installed to run the engine included the No. 6 cylinder intake tube, one front engine mount leg, and slave hoses for the test cell.

The engine was placed in the test cell and started. The engine was run at 1,200 rpm and 1,600 rpm with the fuel pump mixture control at full. After 2 minutes of run time, the engine power started oscillating. The engine was shut down and the mixture control was adjusted to about half of where it was originally set. The engine was started again and after 1 minute and 20 seconds the engine power once again began to decrease, with the fuel pressure reaching 8 psi higher than the max unmetered flow limit of 32 psi.

The Romec fuel pump, part number 630751-3, serial number C3010, was removed and placed on a flow bench. At full power, 2,700 rpm, the fuel flow was about 170 pph with a fuel pressure of 92 psi. The fuel pressure should have been between 29 and 32 psi. The adjustment screw was adjusted and the fuel pressure dropped to 30 psi. The pump was reinstalled on the engine.

The engine was restarted and run up to 1,600 rpm. The rpm slowly dropped to 1,498 rpm. The engine power was increased to 2,552 rpm and the fuel pressure stabilized at 30.18 psi.

During the engine runs it was observed that the engine was overboosting. During the second engine run the turbocharger controller was adjusted to stop the overboosting from occurring.

Submitted by: Pam Sullivan