

Accident Investigation Report for N2714T
NTSB Accident number CEN16LA115
IND FSDO Accident number A-GL-11-16-007
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NARRATIVE

Initial Report

On February 27, 2016 the Indianapolis Flight Standards Office duty inspector received a call from the Regional Operations Center (ROC) regarding aircraft N2714T, serial number D-8438 involved in an off airport landing near Seymour Indiana.

Pilot Interview

On February 29, 2016 the pilot, Mr. Aaron Wright came to the IND FSDO per my request. Mr. Wright was asked to recount the events surrounding event. Mr. Wright explained that he was operating his V35 Bonanza under Part 91 Day/VFR from the Indianapolis Metropolitan airport (UMP) to Bowman airport (LOU) flying at 5,500 MSL. In preparation for landing, he placed the fuel selector valve from the left wing main tank to the right wing main fuel tank; that within 3 minutes the aircraft experienced a loss of engine power he described as "lurching of the engine". Mr. Wright then switched the fuel valve back to the left wing main tank and pushed the mixture to full rich. However, engine power did not recover; he then turned on the high boost pump. The engine "popped (backfired) but the lurching continued. He contacted ATC and reported an engine issue was told to proceed to the Clark County Regional airport (KJVY).

He again contacted ATC and asked to go to a different airport; ATC provided vectors to the Freeman Field (SER) located near Seymour Indiana. Mr. Wright then re-selected the right main tank and turned on the low boost pump and the engine seemed to smooth out but only at a lower power. Mr. Wright then selected the right tip tank, although knowing the tank was empty, he hoped there was fuel remaining. The engine failed to recover power; he then repositioned the fuel selector valve to the right main tank where the engine seemed to run but at low power. Mr. Wright did mention that even though the propeller was turning, it was "quiet" in the cockpit.

Mr. Wright determined that the aircraft would not make the Freeman Field airport. He proceeded to search for suitable location for an off airport landing. He visually scanned for an available location but stated that ground conditions and obstructions prohibited a safe landing and spotted interstate 65. After crossing the interstate in an easterly heading, he turned south and lined up with the southbound lane, extending the gear and flaps at approximately 1,500 MSL. The aircraft landed left of center at approximately 80 Kts. Upon touch down Mr. Wright identified a vehicle in the right lane and maneuvered the aircraft left (toward the median) to avoid. The aircraft continued into the grass median, with the condition of the ground inhibiting his directional control. As the aircraft continued further into the median, Mr. Wright stated that he applied back pressure on the yoke to keep the nose light in an attempt to prevent the aircraft from flipping but he believes may have decreased steering effectiveness.

When the aircraft came to a stop, Mr. Wright stated that he "cut off the fuel" then he and his passengers exited the aircraft.

On Site Investigation

No on site investigation was performed at the scene of the accident. Information provided by the Indiana State Police responding to the scene, indicated that the aircraft landed on the southbound lane of Interstate Highway 65 coming to rest in the median at mile marker 42.4. The pictures appeared to identify substantial damage to the nose landing gear and left wing. Following the event, the owner arranged to have the aircraft transported to Freeman Field, an airport located in Seymour IN. and stored in secure hanger.

On March 1, 2016, Inspector Holtz and I traveled to Freeman Field to inspect the aircraft. The aircraft was sitting on all three landing gear, intact, and with the flaps extended.

There was damage to the nose landing gear assembly; the strut was protruding through the upper wheel well into the engine compartment; the right attachment fitting was pushed up into the keel area. The strut assembly appeared to be intact and remained steerable. Damage to the left wing rear spar was sustained in the area where the flap control rod passes through. The damage included a fracture through the complete rear spar in this area. The lower left wing skin was pulled away from the rear spar extending from the wing root out approximately 30 inches. The upper left wing skin exhibited wrinkling over the length of the wing extending from the wing root to the outboard aileron hinge point between the front and rear spar.

There was a small amount of dried dirt on one propeller blade tip extending approximately 2 inches. Minor dirt marks were present on the other two blades but no identified bending or gouging. Pictures from the scene does show dried dirt on the single blade indicating possible contact with the ground, the condition of the other two blade at the scene could not be determined. The propeller was rotated through a complete several complete cycles with no abnormal condition noted. No damage or abnormal condition was observed on the engine, accessories or within the engine compartment.

Fuel was visible in the right main tank and indicated $\frac{3}{4}$ of a tank on the cockpit fuel gauge (approximately 30 gallons). No visible fuel within the left main tank, cockpit fuel gauge read just above $\frac{1}{4}$ of a tank. Some fuel was visible in both tip tanks, approximately 1 gallon each. To determine fuel state within the left main tank, the pilot was authorized under FAA supervision, to drain fuel from the left main tank. Approximately 9 gallons was removed and the majority was placed back in the tank, less one quarter of a gallon. Approximately one ounce of water was observed at the bottom of the bucket and was discarded. The high and low fuel boost pumps were turned on and appear to operate normally. The fuel selector valve was manipulated through all positions and appeared to operate normally with individual valve detent felt.

Follow On Inspection

On March 2, 2016, the owner and I conducted engine operational test on the accident aircraft. The test comprised of a series of test points to establish static and operational conditions experienced during the accident flight.

While the aircraft remained in the hanger, I drained approximately 6 ounces of fuel from the gascolator located on lower portion of the fuel selector valve; no water contamination observed. The aircraft was then hand towed by the pilot, with my assistance, out of the hanger approximately 50 feet. Fuel observed draining from the lower engine drain tube while the aircraft was being pulled outside. This fuel was determined to be residual stemming from the boost pump operation during the initial inspection. A snow removal blade attached to a front-end loader was positioned under the aircraft's rear tie down point to which I attached a ratcheted strap and tightened to relieve some nose gear load. Additionally, I attached a sizable chain to the aircraft's

rear tie-down and secured under the snow blade. Following a short safety briefing, one safety observer was located on the left side of the aircraft and the other safety observer staffed a fire extinguisher, stood next to me outboard of the right tip tank. I placed a set of chocks on both main wheels and the parking brake set.

The prescribed engine test consisted of the following elements and performed by the pilot/owner:

1. Follow normal engine start procedures, selecting the right main fuel tank. Bring engine up to normal operating temperature and verify engine operation.
2. Perform pre-takeoff engine and propeller procedure and verify engine and propeller operation. Return engine to idle.
3. Perform full power run for approximately 30 to 45 seconds or until engine is stabilized and verify engine operation. Return engine to idle.
4. Operate the aircraft in a like configuration noted during at the time of the event; appropriate aircraft equipment on with engine power set at 2,200-2,300 RPM. Select the left main fuel tank and observe engine operation. Reselect the Right main fuel tank and observe engine operation. Place the fuel selector in-between the right and left main fuel tank and observe engine operation. At any time the engine experiences an interruption in operation, the right main fuel tank would be re-selected.
5. Operate the engine at idle and place the fuel selector valve in the OFF position and observe engine operation and record time to engine stoppage.

During the initial startup and run at idle, the engine appeared to operate normally; the pilot did note a slight hesitation or stutter in engine operation not experienced previously. During the engine warm up phase (2 minutes after start), engine RPM did decrease by 100-200 RPM with no input from the pilot. The pilot indicated that the engine was running within limits through the start sequence as the engine reached operating temperature. I then performed a walk around of the aircraft and observed no abnormal issues.

The pilot then performed a pre takeoff engine and propeller test. I identified a noticeable decrease in engine RPM as the individual magnetos were selected off. Additionally the propeller appeared to cycle normally and confirmed by the pilot. The pilot indicated that the engine was operating within normal limit and returned the throttle to the idle position. The pilot then slowly advanced the throttle to full power. The engine appeared to respond normally but the pilot again noted a slight hesitation or stutter in engine operation not previously experienced. The pilot maintained the full power setting for approximately 45 seconds before retarded the throttle back to the idle position.

Next the pilot advanced the throttle to the appropriate power setting to achieve 2,200-2,300 RPM indicated. He then moved the fuel selector to the left main fuel tank. The engine operated normally with no noticeable interruption in power. After approximately one minute, I instructed the pilot to move the fuel selector back to the right main fuel tank. Again, the engine operated normally with no noticeable interruption in power. I then instructed the pilot to relocate the fuel selector to a position in between the right main and the left main fuel tank. The engine ran normally for approximately 30 seconds when a noticeable loss of power occurred and the engine backfired. The pilot expeditiously returned the fuel selector back to the right main fuel tank and the engine regained power. After the engine stabilized, the pilot retarded the throttle to idle. I then instructed the pilot to move the fuel selector to the OFF position. The engine continued to run for approximately 30 seconds before losing power and stopped running. The pilot secured the aircraft.

During all phases of the engine run test, with the exception of the backfire, the safety personnel around the aircraft observed no abnormal noises, smoke, or fluid coming from the aircraft.

The flaps were not cycled and the flight control movements were held to a minimum. The aircraft was then hand pushed by the pilot, with my assistance, back into the hanger and secured.

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