



CASE FINDINGS

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During the course of the investigation, the following information was collected.

- N200Z was inbound to land to the Lake Charles Airport when the airplane lost engine power. The pilot determined that there were no suitable landing areas, so he made the decision to deploy the Cirrus Airframe Parachute System (CAPS). The airplane descended under canopy and came to rest in a cypress marsh.
- Substantial damage was sustained to the airplane's fuselage.
- The airplane was transported to a salvage yard for further examination. During recovery, it was noted that blue fuel staining was found under the engine cowling and on the engine.
- The fuel line from the fuel manifold to the #1 cylinder was found fractured near the fuel manifold side of the line.
 - o The line was found properly secured with the appropriate hardware.
- On December 10, 2020, the engine was run on the airframe by inspectors from the Federal Aviation Administration with assistance from a representative from Continental Motors.
 - o The #1 fuel injection line was replaced, and the engine ran normally.
 - o After the run, the #1 line was removed, and a plastic line was installed and clamped off to simulate a broken line. The engine restarted to 1,500 RPM.
 - The engine shook and ran rough
 - When the clamp was removed and fuel reintroduced normally to the system, engine performance decreased losing about 200-300 RPM, which could be restored with increased throttle, but the engine continued to run rough.
- The fuel line was shipped to Continental Motors to be examined by metallurgy.
 - o Examination of the fuel line found the mode of fracture to be fatigue. The initiating area was in the heat affected zone of the brazed joint, but the joint was not compromised.
 - o No material anomalies were observed.
 - o Review of the information provide by Continental Motors was assessed by the NTSB Material Laboratory which concurred with the findings.
- According to logbook entries:
 - o The engine had accrued about 1,700 hours and was installed on the airplane in 2003.

- On February 22, 2017, the fuel manifold bracket (p/n 646507) was replaced along with the fuel line clamps.
 - On May 3, 2018, the fuel manifold bracket (p/n 646507) was broken and replaced.
 - The last annual inspection occurred on June 1, 2019, at a total time/Hobbs meter of 1695.2.
- At the time of the accident, the airplane had approximately 1,730 hours.
- The pilot reported having accrued 750 total hours.