

National Transportation Safety Board

Office of Aviation Safety

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ERA24LA235

WRECKAGE EXAMINATION

June 25, 2024

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A. ACCIDENT

Location: Laurel Hill, Florida
Date: May 31, 2024
Time: 1909 CDT
Airplane: N4486L; Temco/Lazier TT-1

B. WRECKAGE EXAMINATION

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C. SUMMARY

On May 31, 2024, about 1909 central daylight time, a Temco/Lazier TT-1 airplane, N4486L, was substantially damaged when it was involved in an accident near Laurel Hill, Florida. The commercial pilot and one passenger were not injured. The airplane was operated as a Title 14 *Code of Federal Regulations* Part 91 positioning flight.

D. DETAILS OF THE EXAMINATION

1.0 Accident Site

The accident site consisted of grass-covered pastureland. The landing site was rough and uneven.

2.0 Airframe Examination

The wreckage was examined and documented at the accident site on June 3, 2024. A follow-up examination at Florida Air Recovery, Jacksonville, Florida was performed on June 25, 2024.

2.1 Fuselage

The fuselage was intact. There was no postaccident fire. There was scraping and structural damage to the lower fuselage (belly) throughout most of its length. The landing gear doors were closed. The empennage separated at its attachment manufacturing break, located about 12 inches forward of the vertical stabilizer fairing.

Flight control continuity was not examined due to the circumstances of the accident.

There were scrape marks on the nose cone and canopy as the result of the airplane contacting a barbed wire fence.

2.2 Empennage

The vertical stabilizer and rudder appeared to be undamaged. The horizontal stabilizer and rudder appeared to be undamaged. The elevator trim tab was at neutral. The speed brake was stowed. There was crushing damage to the fiberglass tailcone.

2.3 Wings

The outboard sections of the wings were removed by recovery personnel. The inboard sections were undamaged. The outboard sections of both wings, about 14 inches from the tips, were bent and buckled downward, about 35°, with the wing tip fuel tanks still attached. There was a puncture to the left

wing's leading edge as a result of contacting a barbed wire fence. Both tip tanks exhibited buckling and scraping damage. There was a tear in the outer aluminum skin on the left tip tank; the interior bladder tank appeared undamaged.

All four fuel caps were secured and in place. The seals were in good condition.

The wing flaps were found in the full down position. The flap levers in the cockpit were also in the full down position. The left wing flap was bent and buckled in a downward direction about 20 inches from the outboard end. The right wing flap exhibited minor dents in the skin.

2.4 Landing Gear

The landing gear were found in the retracted positions and the gear handles in the cockpit were in the retracted (up) positions.

2.5 Cockpit

The cockpit was undamaged. The Hobbs meter read 217.7 hours. All circuit breakers on the lower right panel, forward cockpit were in. Both tip tank (transfer pump) toggle switches were in the ON positions.

When battery power was applied, annunciator panel and wing tip transfer pump lights illuminated.

2.6 Survivability

The pilot and passenger were not injured.

The ejection seats were equipped with four-point harnesses and the seats were inert.

The cockpit canopy opened and closed normally.

2.7 Fuel/Fuel System

The airplane was equipped with 50-gallon tip tanks on each wing, and three bladder tanks inside each wing with a total capacity, per wing, of 62 gallons. The total fuel capacity was 224 gallons.

A fuel transfer pump was fitted to the lower side of each tip tank. The pumps were energized with a battery source and operated normally. The fuel quantity transducers were removed and tested normally (mechanically and electronically).

Both tip tank pump switches were found in the "ON" positions. According to the operator, the pumps would continue to operate after the accident if battery power was available.

Wreckage recovery personnel reported that there were 33 gallons recovered from the left tip tank, and 40 gallons were recovered from the right tip tank. About 30 gallons in total were recovered from the two inboard wing tanks (the four outboard wing tanks were empty). Approximately 103 gallons were recovered from the entire fuel system. The amounts of fuel were estimates only and were not quantified.

According to CAF, the transfer rate from the tip tanks was reportedly 80 gallons per hour, or 1.33 gallons per minute.

The operator provided expected fuel consumption calculations for the trip, using pilots operating handbook data. A conservative estimate for the trip, assuming no course deviations, was 123 gallons. The pilot did deviate around weather in the area northwest of the destination airport (CEW), adding to the trip's flight time.

The airplane was equipped with a Shadin Avionics fuel flow indicator. The indicator was removed from the instrument panel and sent to the NTSB Vehicle Recorders Laboratory for examination and download of its nonvolatile memory. The data revealed that 144 gallons of fuel were used, and 81.4 gallons of fuel remained at power off.

3.0 Engine Examination

There was limited accessibility to the engine due to aircraft design; however, there was no evidence of case rupture or fluid leakage.

The stage 2 turbine blades appeared undamaged when viewed from the exhaust. The interior of the exhaust duct was clean.

Both compressor bleed valves (stages 3, 4, 5; at 3 and 9 o'clock on casing) were wide open. According to GE, this is consistent with normal spool down of the engine.

Small pieces of ground debris consistent with dry, green grass were seen in many of the bleed valve holes into the compressor. According to GE, this is consistent with compressor rotation during ground impact, causing debris ingestion.

Investigators were unable to view compressor inlet and inlet guide vanes due to the long, bifurcated inlet. The engine was not removed from the fuselage.

Investigators dry-motored the engine on battery power twice, each time for about 10 seconds (videoed); the spool-up sounded normal with no unusual engine noises.

4.0 Maintenance History (Engine)

The engine was installed in N4486L on 4/12/22 at 5,296 hours total time since new and 3,483 hours time since overhaul. The cockpit Hobbs meter read 179.1 hours.

7/12/22: 600 hr inspection; 5-year corrosion inspection; overspeed governor and fuel pump replaced with overhauled units.

1/11/23: Removed engine to replace P&D (pressurizing & drain) valve; 194.6 on Hobbs; ground run and leak checks were satisfactory.

At accident: 217.7 hrs on Hobbs. Therefore 38.6 hrs time since installed in N4486L in Apr 2022.

Submitted by:

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