National Transportation Safety Board
Office of Aviation Safety
Washington, DC 20594

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WRECKAGE EXAMINATION

May 23, 2023

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A. ACCIDENT

Location: Palm City Farms, Florida
Date: March 21, 2023
Time: 1530
Aircraft: Commander 114TC
Registration: N6042E

B. WRECKAGE EXAMINATION

Investigation Team:

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C. SUMMARY

On May 21, 2023, at approximately 15:30 eastern daylight time, a Commander 114TC, N6042E was destroyed when it collided with the ground near Palm City Farms, Florida.

D. DETAILS OF THE EXAMINATION

1.0 Accident Site

The accident site revealed that the wreckage of the airplane was oriented on a 168° heading. The airplane collided with ground and came to rest in a field about 700 yards from the departure end of runway 36 at (64FA).

2.0 Airframe Examination

The wreckage was examined and documented at the accident site on May 22, 2023. A follow-up examination on the engine airframe was performed on 5/24/2023 at Florida Air Recovery, Jacksonville, FL.

2.1 Fuselage

Examination of the airframe revealed that the fuselage was completely consumed by post-impact fire. Seat tracks and flight control cables were exposed throughout the fuselage. The flight control cables were continuous and remained attached to their respective bellcranks and routed through the associated pulleys within the fuselage structure.

2.2 Empennage

The empennage exhibited impact damage and partial post-impact fire damage but remained attached to the lower portion of the fuselage. The rudder remained attached to the vertical stabilizer, and both elevators remained attached to their respective horizontal stabilizers. The elevator trim tab was observed partially in the tab-up position; however, due to impact damage, the position could not be considered reliable. Flight control continuity was confirmed from the cockpit controls to the rudder and elevators through the associated control cables.

2.3 Wings

Both the left and right wings were consumed by post-impact fire. Portions of control cables and structural remnants remained. Flight control continuity was confirmed from both wings through the fuselage to the cockpit controls. The fuel caps on both wings were found secured and locked in place on their respective fuel filler necks. The ailerons exhibited both impact and thermal damage. Due to the extent of fire damage, the flaps appeared to be in the retracted (up) position. The flap control tubes were severely fire-damaged, with only melted remnants remaining.

2.4 Landing Gear

The main landing gear assemblies remained attached to their respective wing structures and were found in the retracted (up) position. Both main gear exhibited impact and fire damage. The nose landing gear remained attached and also exhibited evidence of impact and thermal damage.

2.5 Cockpit

The cockpit area sustained extensive impact and post-impact fire damage. All flight controls and instrumentation were destroyed. The positions of the engine and propeller controls at the time of ground impact could not be determined due to the extent of the damage.

2.6 Survivability

The pilot's seat was equipped with a 3-point restraint system. The seat and restraint components were destroyed by impact forces and post-impact fire.

2.7 Fuel/Fuel System

Both wing fuel tanks were destroyed by post-impact fire. All fuel lines within the wings and those located in the fuselage were fire damaged, with only remnants remaining. The fuel selector was found positioned to the right tank and was functionally tested using forced air. All selector positions were checked, and the detent mechanism operated as designed. During the examination of the aircraft's storage location, several empty fuel containers (jerry cans) were observed. No records of fueling were available for review.

3.0 Engine Examination

The engine remained attached to the engine mounts and exhibited evidence of post-impact fire damage. A borescope inspection of all cylinders and valve faces revealed normal conditions. The engine was manually rotated through 720°, and compression was achieved on all cylinders.

An unquantified amount of oil leakage was observed, consistent with impact-related damage. The oil was clean, with no visible contamination or debris. The oil suction screen was securely installed, removed, and found free of debris.

All spark plugs exhibited normal wear and coloration, with no signs of fouling or malfunction. Both magnetos were removed and rotated by hand, producing spark across all terminals.

The propeller governor oil screen was removed and found clean. Both vacuum pumps were removed for inspection; the lower pump exhibited impact and thermal damage, while the upper pump appeared undamaged.

The engine-driven fuel pump was removed and functionally tested, producing continuous fuel flow during manual rotation of the input shaft. The fuel manifold divider was removed and disassembled; the diaphragm was intact, and no heat damage was noted. A trace amount of fuel was observed inside the unit. The fuel injectors were inspected and found free of obstructions. The fuel inlet screen from the fuel injection servo was removed and found clean and free of debris.

Examination of the turbocharger revealed both turbine wheels were undamaged and rotated freely by hand. No debris was found in the inlet section of the turbo system.

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Submitted by:

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