

National Transportation Safety Board

Office of Aviation Safety

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CEN22LA228

N5007R EXAMINATION REPORT

November 29, 2022

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A. ACCIDENT

Location: Allport, Arkansas
Date: June 1, 2022
Time: 1700 Central Time
Airplane: N5007R, Air Tractor AT-602

B. N5007R EXAMINATION REPORT

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Denver, Colorado

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C. DETAILS OF THE EXAMINATION

1.0 Accident Site

The airplane came to rest on private property in an area with trees in mud. The airplane sustained substantial damage to the left wing, the fuselage, and the empennage. The airplane came to rest inverted. There were no signs of fire damage.

The Federal Aviation Administration responded to the accident site and noted a strong odor consistent with fuel. The wreckage was recovered from the accident site to Dawson Aircraft in Clinton, Arkansas. At the time of the accident, the estimated density altitude for the airstrip the airplane departed from was 2,762 ft above msl.

2.0 Airframe Examination (Air Tractor AT-602, serial number 602-0501)

The NTSB IIC (Michael Hodges) and a FAA aviation safety inspector (Johnny Victory) traveled to Dawson Aircraft to examine the wreckage on November 28, 2022, and November 29, 2022. Various staff members from Dawson Aircraft assisted with the examination.

The airframe was examined using a checklist provided by Air Tractor. The airframe was photographed during the examination.

There were no signs of an airframe fire.

Various airframe panels were removed to facilitate the examination.

The survival structure of the cockpit area remained intact.

Flight control continuity was established for the airframe.

The fuel selector was examined and found to be functional, the detents were noticed when the fuel selector handle was manipulated by hand. The selector was found on the fuel option (there is only the fuel option and the off positions). There were no blockages noticed with the fuel selector.

The hopper was found removed when the airframe was examined,

Fuel was found in the fuel lines at the fuel pump, to the fuel selector, the header tank, and going forward to the fuel strainer. The fuel strainer, on the firewall, was removed. A large amount of unknown brown foreign object debris (FOD) was found inside of the strainer bowl. The strainer filter appeared to have the same unknown brown FOD on it. Various engine fuel lines had fuel inside them during the engine removal.

Both wing tanks were found intact and were empty of fuel. Both fuel tank caps and the retention chains were found installed. The two fuel tank caps appeared to be the correct fit for the two fuel tanks. The inside of both fuel tanks was partially examined and no FOD was observed. The finger screens in both tanks appeared clear. The fuel vent lines for each tank were found to be clear of FOD.

The airframe fuel pump was removed for further examination, and it was packaged and put in secure storage at Dawson Aircraft.

The header tank was removed and both connecting nipples of the tank appeared to be unobstructed.

Fuel samples were obtained from the airframe fuel pump and the header tank. Except for the fuel sample obtained from the fuel strainer, the other fuel samples appeared to be free from FOD. The various fuel samples, the fuel strainer bowl, and the fuel strainer filter was packaged and put in secure storage at Dawson Aircraft.

Fuel flow was confirmed from the wings going forward to the fuel strainer bowl.

According to the Dawson Aircraft recovery team, no fuel was recovered at the accident site, however a large amount of fuel was found mixed in mud at the accident site. During the recovery, fuel was found in various fuel lines such as during the wing removal process.

The electric flap actuator was located and the distance of the gap between the actuator gearbox and the ball nut is 2 and 7/8 inches. According to Air Tractor, this measurement corresponds to a flap position of 21 degrees.

The various pieces of engine cowling were removed. The engine mount was found to be intact.

The cockpit was found with a large amount of mud inside of it, as the airplane came to rest inverted. The two cockpit panels remained intact. No circuit breakers were found to be extended or tripped. The following pertinent readings were observed:

- The Hobbs meter showed 1,429.5.
- The left and right fuel tank indicators were impact damaged and a reading could not be obtained.
- The fuel boost pump switch was found in the off position.
- The engine oil pressure and temperature gauge were showing zero.
- The fuel pressure gauge was showing zero.
- The NG gauge was showing zero.
- The propeller gauge was showing zero.
- The torque gauge was showing 200 ft/lb.
- The ITT gauge was showing zero.
- The boom pressure gauge was showing zero.
- The airspeed indicator gauge was showing zero.
- The altitude gauge was showing about 256 feet and about 29.72.
- The compass appeared to be stuck on about 360 degrees.
- A Crop Hawk 7b was found installed but no digital readings were showing.
- The engine start switch was off.
- The engine ignition continuous switch was on.
- The overspeed switch was off.
- The battery switch was on battery.
- The generator switch was off.

A four-point restraint system was found inside the cockpit (no restraint airbags were installed). The restraint system was intact and was attached to the airframe. The left side of the shoulder harness was found cable-tied (a black cable tie) to the left side lap belt portion. It is unknown why this modification was made to the restraint system. The system could still be fully connected when the cable-tie modification. The lap latch portion of the system was functional when tested. The shoulder harness had an Amsafe Inc. identification tag on it. The lap portion did not have an identification tag on it. There was no inertia reel system found with the restraint system. The webbing of the restraint was saturated in dried mud but appeared to be intact. The restraint system was removed from the airframe, and it was laid on the floor of the salvage facility for documentation purposes.

The seat was found intact, and it was attached to the airframe.

The control quadrant and trim and elevator controls was found intact and did not appear to be damaged. The positions were photographed. The power lever (blue) and the condition lever (red) were both found in the green flight idle areas. The quadrant friction knob was not found. It is undetermined if the knob came off during the impact sequence. The friction settings were undetermined.

The various cockpit gauges were cleaned and photographed. Several of the gauges were found broken from the impact sequence.

A SATLOC M3 Bantam and a Shadin Fuel Flow Indicator were removed and were shipped to the NTSB Recorders Laboratory. An emergency locator transmitter was not observed inside of the airplane.

3.0 Engine Examination (Pratt & Whitney Canada PT6A-60AG, serial number RG0093)

Only a visual examination was performed on the engine. The engine appeared intact. Airframe to engine control continuity was established. There were no signs of fluid leaks with the engine. The various fluid lines and fluid connections all appeared intact. There were no signs of fire damage or FOD ingestion sustained to the engine. The engine was photographed during the examination.

There were no signs of an engine fire.

The two exhaust ducts were removed to facilitate shipment.

There were no onboard engine recording devices found in the airframe or the engine.

The engine was removed from the airframe and was placed inside of a wood shipping crate. The engine was shipped to Pratt & Whitney Canada in Bridgeport, West Virginia, for further examination work in the future.

4.0 Propeller Examination (Hartzell HC-5MP-3C/M10876ANS)

Only a visual examination was performed on the propeller. The five-blade metal propeller remained attached to the engine. There appeared to be propeller control continuity.

All five blades sustained impact damage and were found bent rearwards at various angles.

The spinner sustained very minimal impact damage but was found attached. The spinner was removed to document the propeller. The propeller was photographed during the examination.

All blades were cut to facilitate shipment inside of the crate at 12 inches from the base clamp. All blade pieces were placed inside of the crate. The propeller was shipped to Pratt & Whitney Canada in Bridgeport, West Virginia, for further examination work in the future.

5.0 Maintenance Records

The airframe, engine, and propeller records were reviewed and documented. There was no evidence of any uncorrected mechanical issues listed in the maintenance records. The maintenance records were shipped to Pratt & Whitney Canada in Bridgeport, West Virginia, for the further examination work in the future.

6.0 FAA Historical Airworthiness Records

The FAA historical airworthiness records were obtained and reviewed.

Submitted by:

Michael J. Hodges
Investigator-In-Charge