



Air Tractor, Inc.
Accident Investigation

EXAMINATION REPORT

NTSB Accident Number:

WPR19LA112

Date & Location of Accident:

4/16/19
Morganza, LA

PREPARED BY:

Dakota Lowe
Air Tractor, Inc.



Air Tractor, Inc.
Accident Investigation

FACTUAL INFORMATION

AIRCRAFT:

AT-502B manufactured in 2000
502-0599
N599LA

DATE & TIME:

4/16/19
~07:57am local (CDT)

INJURIES:

Serious

LOCATION:

Approx. 3 miles west-southwest of
Morganza, LA
N 30.72239° W 91.64800° (Approx. crash
site)

PILOT:

Karl Comeaux

OPERATOR:

Aerial Crop Care, Inc.
[REDACTED]
Port Barre, LA 70577

NTSB INVESTIGATOR:

Tealeye Cornejo
Western Pacific Region
[REDACTED]
Federal Way, WA 98003
[REDACTED]

INSURANCE:

Not Recorded

FAA INVESTIGATOR:

Keenon Wood
Baton Rouge FSDO
[REDACTED]

SALVAGE:

T. W. Cook
Southern Aircraft Recovery, Inc.
[REDACTED]
Baton Rouge, LA 70814

OTHER CONTACTS:

Tom Burdick
Aerial Crop Care
[REDACTED]

OTHER CONTACTS:



Example of AT-502B in Flight

The information contained in this report is the result of traveling to the Southern Aircraft Recovery warehouse on 5/23/19 under the supervision of NTSB IIC Tealeye Cornejo. The wreckage examination was conducted after the aircraft had been recovered from the accident scene by the salvage company. Also present during the examination were Kyle Schroeder of Air Tractor Inc., T.W. Cook of Southern Aircraft Recovery and FAA Inspectors Keenon Wood and Byron Billiot.

This report is subject to revision as additional information becomes available. The intent of this report is to provide details relating to the investigation of the subject accident.

REPORTED INFORMATION REGARDING THE ACCIDENT SITE:

It was reported that the pilot lost control of the airplane while attempting to land. Witnesses on the ground reported that the airplane pitched up, then almost straight down before impacting the ground at the end of a grass strip being used as a runway. The grass strip was located between two cultivated fields 3 miles west-southwest of Morganza, LA. The airplane was reported to have overturned and was partially consumed by fire.



Location of Accident

During the initial on scene investigation FAA Inspector Keenon Wood reported that the aluminum elevator pushrod was found disconnected from the forward idler. The bolt intended to connect the idler to the pushrod was reported missing. A bolt suspected of being the missing bolt was reportedly found, loose, in the wreckage.

GENERAL OBSERVATIONS OF THE WRECKAGE:

Upon initial arrival at the salvage company's facilities, the fuselage and wings were found laying upright. The wings had been separated from the fuselage along with the horizontal stabilizers and elevators. The aft fuselage was found separated from the cockpit just aft of the air conditioner plenum. The engine and engine mount were separated from the fuselage. The propeller was separated from the engine.



Forward Fuselage Wreckage



Aft Fuselage Wreckage



Right Wing Wreckage



Left Wing Wreckage

The airplane was confirmed to be N599LA, which is an Air Tractor AT-502B, serial number 502B-0599 which was manufactured in 2000. According to the MVP-50T engine monitor system, the aircraft had 1839.6 hours, time-in-service at the time of the accident.

FUSELAGE:



Engine Mount Wreckage (Right Side)

The fuselage was found with impact and isolated heat/fire damage. The engine and engine mount were separated from the firewall and were examined separately. The engine remained attached to the mount and the mount showed significant crumpling and impact damage.

The mid-fuselage section between the firewall and cockpit was found with impact damage and

heat/fire damage on the forward, right side of the firewall.



Cockpit Wreckage



Pilot Seat and Instrument Panel

The occupiable space in the cockpit was reduced due to deformation of the upper overturn structure aft and the movement of the upper instrument panel toward the pilot's seat. The aircraft was found to be equipped with four-point restraints that remained buckled. The webbing on three of the four restraints was reported to have been cut during pilot extrication. The left lap belt remained attached to the seat anchor point.

The powerplant control levers (power, propeller, and condition levers) were found in the following positions: The power lever was in a low power position, the propeller lever was in a full forward position and the condition lever was in the ground idle position. These would have been typical control positions during final approach, but due to damage of the aircraft, extrication efforts of first responders and recovery of the airplane, it is possible that these do not represent the pre-impact positions.

LANDING GEAR:

Both main landing gear springs remained attached to the fuselage attach points. Both wheels and tires remained attached to the gear springs.

The tail gear was found attached at the fuselage attach point.

WINGS:

The wing center splice connection was found intact, separated from the right fuselage attach point and attached to the left fuselage attach point. Both wing main spars appeared to have been cut during the aircraft recovery. The right rear spar attach plate was found separated from the fuselage, consistent with shear tearout. The bolt remained installed in the fuselage fitting.

Both wing leading edges were crushed aft and downward to the main spar. Both fuel tank top skins exhibited bulging between the wing ribs.



Right Wing with Aileron



Left Wing with flap and Aileron

Both ailerons remained attached to the wings. The left flap remained attached to the left wing. The right flap was found separated from the wing. Both aileron counterweights were found in place.

Each of the wings were equipped to hold 85 gallons of fuel in the integral wing fuel tanks, for a total capacity of 170 gallons.

EMPENNAGE:

The vertical stabilizer and rudder were found relatively undamaged at the aft end of the fuselage. The top of the rudder was found damaged and mud was found at the top of both the vertical fin and the rudder.

The horizontal stabilizers and elevators were found separated from the aft fuselage. Evidence that the hardware had been installed prior to the accident was provided in the damage to the attach points.

FLIGHT CONTROLS:

All flight control surfaces were found in the wreckage. All observed separations were consistent with overstress or separation by the recovery personnel other than a separation in the elevator controls between the forward idler and the main pushrod.

Elevator Controls

The elevator controls are manually operated by steel and aluminum pushrods connecting the control stick to the elevator control horns through two control idlers. The controls were found to be continuous from the control stick to the forward idler. The bolt connecting the forward idler to the main pushrod (see red circle in Figure 1) was not found in its proper location. No sign of damage to the forward idler or to the rod end bearing was found to indicate properly

installed hardware prior to the accident. A bolt suspected of being the missing bolt was located, loose, in the wreckage during the on scene investigation performed by FAA Inspector Keenon Wood. A nut was not located in the wreckage. During the on scene investigation the aluminum pushrod was removed from the airplane and taken possession of by FAA Inspector Keenon Wood. The elevator controls were found to be continuous from the aft idler to the elevator control arms, which were torn from the elevator torque tubes.

Forward Elevator Control Sytem



Bolt Found by FAA



Forward Elevator Idler



Forward Rod End Bearing of Elevator Aluminum Pushrod

Rudder Controls

The rudder controls are manually operated by a pair of stainless steel cables running directly from the rudder pedal assemblies to the rudder control horns. Both left and right cables had been cut during recovery of the airplane (as reported by the recovery crew). The cables were shown to be continuous to the rudder pedals through movement of the pedals relative to the movement of each cable. The left cable was continuous to the rudder control horn aft of the cut. The right cable had been removed from the rudder control horn during the recovery of the airplane (as reported by the recovery crew). The right cable was found to be continuous from the cut to the rudder cable guard.

Aileron Controls

The aileron controls are manually operated by steel and aluminum pushrods connecting the control stick to the aileron control horns through a torquetube and multiple bellcranks and idlers. In addition, the AT-502B ailerons incorporate a drooping feature that lowers both ailerons in conjunction with extension of the flaps. The aileron drooping controls are documented below under "Flap System".

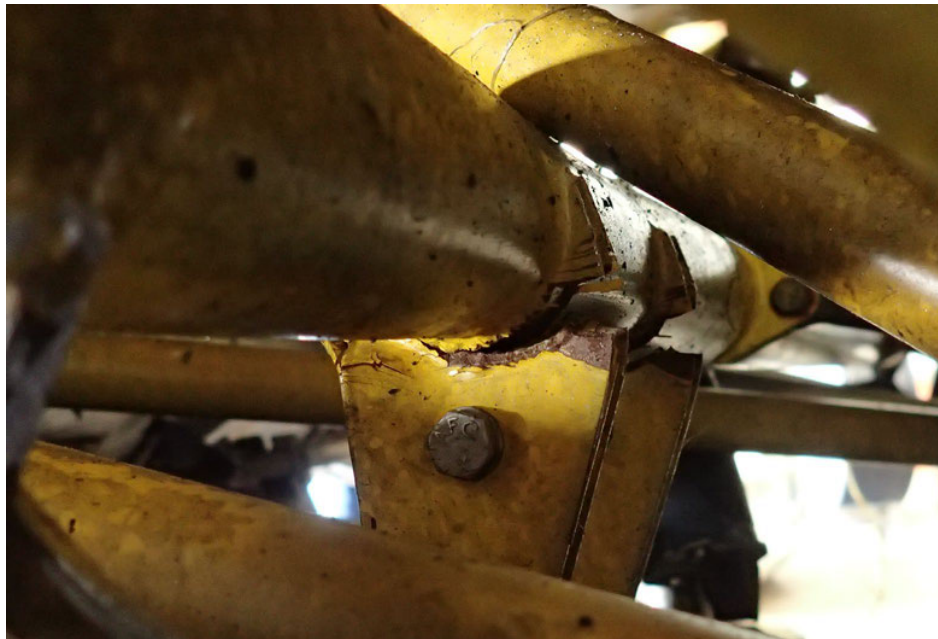
The left aileron controls were found to be continuous from the control stick to the aileron except for a cut through the long wing mounted pushrod inboard rod end. The cut appeared to have been made during the aircraft recovery. Continuity between the cut and the aileron was shown through relative motion of the pushrod when the aileron was moved. The right aileron controls were found to be continuous from the control stick to the wing mounted bellcrank except for a cut through the long wing mounted pushrod inboard rod end. The cut appeared to have been made during the aircraft recovery. Continuity from the cut to the bellcrank was shown through the relative motion of the bellcrank when the long wing mounted pushrod was moved. The rod end bearing connecting the small wing mounted pushrod to the bellcrank was found fragmented in a manner consistent with overstress.

Flap System

There was minimal damage to the flap control system. The flap control system was found to be continuous from the flap actuator to the flap pushrods. The flaps were detached from the pushrods during the recovery of the airplane (as reported by the recovery crew). The flap actuator was found to have an extension of 3", which corresponds to a flap extension of approximately 23°.



Flap Actuator Extension



Partial Separation of Flap Torque Tube Plates

The flap torque tube plates were found partially separated from the torque tube. Service Letter #347 was issued on 6/10/16 to notify operators of the potential for cracks to form in this location. The service letter includes a procedure for inspection of the welds. It is unknown if the partial separation occurred prior to the accident, or during the accident sequence.

The aileron drooping system was found damaged but continuous. All of the rod ends and installation hardware were found to be present and installed.

POWERPLANT:



Engine Wreckage

The powerplant was found attached to the engine mount. Through documentation the engine was determined to be a PT6A-42, serial number PCE-PJ1125. The engine exhibited impact damage and was found with a separation at "A" Flange.



Propeller Wreckage

The engine was equipped with a three bladed reversible Avia propeller. All three blades remained attached to the hub.

Data Recovery:

The MVP-50T unit, S/N: 174727, was removed from the airplane and the data was downloaded without being deleted from the unit. A copy of the data was received by NTSB IIC Tealeye Cornejo, FAA Inspector Keenon Wood, and Dakota Lowe of Air Tractor, Inc. Removal and download of the unit were supervised by NTSB IIC Tealeye Cornejo. Upon completion of the download the unit was left with the wreckage.

DISTURBANCE OF WRECKAGE:

Our disturbance of the wreckage was limited to handling components to the extent necessary for identification and documenting their condition, including removing inspection covers/access panels. We did not make any modification to the aircraft wreckage that would intentionally result in loss of evidence.

Only the MVP-50T unit was removed by Air Tractor personnel during our involvement in this accident investigation. Upon completion of the data download the unit was returned to the wreckage.

FAA Inspector Keenon Wood took possession of the forward elevator control idler and the bolt suspected of being the missing elevator control bolt.