



Air Tractor, Inc.
Accident Investigation

AIRFRAME EXAMINATION REPORT

NTSB Accident Number:

CEN18LA019

Date & Location of Accident:

10/24/17
Olton, TX

NTSB REQUESTED CONFIDENTIAL:

The information contained in this report is produced for the sole purpose of providing observations and information to the NTSB and/or FAA during an active accident investigation. No entity may release or share this information prior to its inclusion in the NTSB's public docket without the express written consent of Air Tractor, Inc.

PREPARED BY:

Kyle Schroeder
Air Tractor, Inc.





Air Tractor, Inc. Accident Investigation

FACTUAL INFORMATION

AIRCRAFT:

AT-502B manufactured in 1999
502B-0591
N502G

DATE & TIME:

10/24/17
~08:20 am local (CDT)

INJURIES:

Fatal*
*on Dec. 3, 2017

LOCATION:

Approx. 5.5 miles West of Olton, TX
N 34.188827° W 102.235647° (Crash site)

PILOT:

Joshua "Kyle" Hollis (23)
[REDACTED]
Tupelo, MS 38801

OPERATOR:

King Ag Aviation, Inc.
[REDACTED]
Sudan, TX 79371

NTSB INVESTIGATOR:

Josh Lindberg
Central Region
[REDACTED]
Denver, CO 80239
[REDACTED]

AIRCRAFT OWNER:

GB Aerial Applications, Inc.
[REDACTED]
Plains, TX 79355
[REDACTED]

FAA INVESTIGATOR:

Corey Wehmeyer
FAA Lubbock FSDO
[REDACTED]

FAA INVESTIGATOR:

Andy Smith
FAA Lubbock FSDO
[REDACTED]

INSURANCE:

Information not available

SALVAGE:

Don Aydelott
George's Aircraft
[REDACTED]
Lockett, TX 76384



Example of AT-502B in Flight

The information contained in this report is the result of a wreckage examination conducted at George's Aircraft in Vernon, TX on 1/19/18 under the supervision of FAA Inspectors Corey Wehmeyer and Andy Smith of the Lubbock FSDO. This examination was conducted after the wreckage was removed from the accident scene by the salvage company.

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. This report is not to be shared with any person outside the scope of this official investigation.

GENERAL OBSERVATIONS OF WRECKAGE:

The wreckage was segregated from other aircraft wreckage at the north side of the George's Aircraft facility in an open area. The wreckage had been stored outside since its recovery and was therefore weathered as expected. Much of the aircraft, primarily the fuselage and inboard wings were heavily damaged by post-crash fire. The forward portion of the fuselage, including the engine compartment, was crushed by impact forces.



General Condition of the Wreckage during Examination

The leading edges of both wings were crushed aft from the leading edge to the main spar. The outboard portions of both wings exhibited chordwise crushing and buckling. There were multiple containers and plastic bags of small debris located with the wreckage.

FUSELAGE:

The firewall forward portion of the fuselage was found separated from the remainder of the fuselage and exhibited substantial fore-aft crush damage. The remainder of the fuselage was found with heavy impact and fire damage from the cockpit to the aft fuselage. The cockpit windshield frame remained in place and did not exhibit any obvious impact damage. The windshield glass was not in place in the frame.

The cockpit seat frame was found intact and connected to the fuselage seat rails. All mounting points of the 4-point pilot harness were found installed. The aircraft was not equipped with the AmSafe Inflatable Restraint airbag system. The harness webbing had been destroyed by fire. The seat belt buckle assemblies and adjusters were found in the wreckage and were not found buckled together.



Fuselage Wreckage with Aileron Controls



Fuselage Wreckage viewed from Rear with Vertical Fin and Rudder

LANDING GEAR:

The tailgear was intact and generally undamaged. The main landing gear springs remained attached to the fuselage. The lefthand wheel, tire, and brake remained in place on the lefthand gear leg with the tire having significant fire damage. The righthand wheel, tire, and brake separated from the spring and was found in the wreckage with no discernable fire damage.

WINGS:

Both wings had remained attached together at the center splice and attached to remnants of the fuselage frame. Both wings received substantial chordwise crush damage along the entire span, with the rightwing experiencing more damage than the left. The inboard end of the wings containing the fuel tanks had been destroyed by fire. The wing rear spar attach plates remained attached to the fuselage.

Both ailerons were in place in their proper locations on the wing with heavy impact and heat/fire damage. The flaps had been mostly destroyed by heat/fire damage with components from both flaps found among the wreckage debris.

EMPENNAGE:

The empennage and control surfaces were intact and removed from the fuselage wreckage during recovery. According to the FAA Investigator who had visited the accident scene, the empennage and control surfaces had been in place prior to recovery. Both elevators remained attached to the stabilizers and the trim tabs remained in place on the elevators.

The vertical fin and rudder exhibited no obvious damage.

FLIGHT CONTROLS:

All flight control surfaces were located with the primary wreckage and in their expected locations within the wreckage. Flight control continuity was established to the extent possible by the condition of the wreckage.

It was noted that the rudder-aileron interconnect system and the elevator downspring system were present in the aircraft wreckage.

Elevator Controls

The elevators are controlled by a system of pushrods and idlers. The controls were found to be continuous from the control stick to the elevator horn connection except for heat/fire damage to the aluminum components in the system. All control rod hardware was found to be in place.



Elevator Controls at Rear Idler

Rudder Controls

The rudder controls are cable operated and were found to be continuous and free. The rudder cables were attached at the aft end to the rudder control horn and routed through the fuselage to the cockpit. The forward ends of the cables were attached to their anchor points on the pedal adjustment channels. The aluminum adjustment channels and the aluminum rudder pedal castings had been destroyed by heat/fire. The rudder pedal hangers and their attachment to the fuselage frame were found to be intact.



Example of Rudder Cable Attachment at Forward End

Aileron Controls

The ailerons are controlled by a system of pushrods and bellcranks. The lefthand aileron system was continuous from the control stick to the wing/fuselage interface. At this point, the aluminum pushrod had been destroyed by heat/fire, but the rodend and hardware remained intact on the aileron bellcrank. The outboard end of this aluminum pushrod was found intact in the lefthand wing and the controls were continuous from this point to the connection at the lefthand aileron. The rodend at this connection was fractured consistent with tensile overload.

The righthand aileron system was also continuous from the control stick to the wing/fuselage interface. The inboard end of the aluminum pushrod had been destroyed by heat/fire, but the rodend and hardware remained intact on the aileron bellcrank. The outboard end of this pushrod was found intact and continuous from this point to the righthand aileron, which remained connected.

The ailerons are equipped with a drooping mechanism that droops (i.e "lowers") both ailerons when the flaps are deployed. The drooping system for the lefthand aileron was intact except that a rodend was fractured where it attached to the flap torque tube. This fracture was consistent with tensile overload and the hardware remained intact and installed.

The drooping system for the righthand aileron was found intact except for two fractures of pushrod rodends. One fracture was at the aileron bellcrank attachment and the other was at the flap torque tube attachment. Both of these fractures were consistent with tensile overload and the hardware remained intact and installed.



Lefthand Aileron Drooping System

Flap System

A portion of the flap actuator assembly was found in the wreckage. Measurements were taken of the flap actuator shaft and it was found that the flaps had been extended to a position corresponding to approximately 22 degrees of flap extension at the time of impact. This flap setting is significantly more than the 5 to 8 degrees specified in the AT-502B Airplane Flight Manual (AFM) for agricultural turns.



Measurement of Flap Actuator Components



Flap Torque Tube with Hardware Intact

Trim Systems

The elevator trim controls were found to be continuous from the cockpit. These controls were heavily damaged by heat and fire damage.

POWERPLANT:

The engine and propeller remained attached to the engine mount and firewall and were found with significant crush and fire damage. The position of the engine did not allow the data plate to be read without significant disassembly, which was not performed. The propeller was found attached to the engine propeller flange and had two (of three) blades attached. The third blade had been dislocated and was found within the wreckage debris. The tip of this third blade had separated.



Propeller and Engine Wreckage



Separated Propeller Blade

The engine powerplant controls were located and found to be continuous to the extent possible from the wreckage condition. The cockpit power quadrant was found to be heavily fire damaged with all three push-pull cables attached (power, propeller, and fuel condition levers). The length of these cables were traced to the extent possible with no discontinuities noted. The position of the engine controls prior to impact could not be determined.



Remaining Portion of the Cockpit Engine Controls with Cables Attached

DISTURBANCE OF WRECKAGE:

No portion of the wreckage was removed by me during my involvement in this accident investigation. My 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 if necessary. I did not make any modification to the aircraft wreckage that would result in loss of evidence.

The FAA investigators found and retained damaged components of what was thought to be the pilot's cellular phone and the tip of one propeller blade that had separated from the remainder of the blade.