



## **NATIONAL TRANSPORTATION SAFETY BOARD**

Office of Aviation Safety  
Central Region

March 10, 2021

# **ON SCENE OBSERVATIONS**

**CEN21FA150**

This document contains 16 embedded photos.

**A. ACCIDENT**

Location: Berwyn, NE  
Date: March 6, 2021  
Aircraft: Aviat A-1B, Registration N166WW, Serial #2372  
NTSB IIC: Samantha Link

**B. EXAMINATION PARTICIPANTS:**

Alex Lemishko  
Senior Air Safety Investigator  
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Air Safety Investigator  
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**C. SUMMARY**

An on scene examination of the airframe and engine was conducted on March 8, 2021. No anomalies were noted during the examination.

**D. DETAILS OF THE INVESTIGATION**

**1.0 Accident Site Overview**

The airplane impacted a field perpendicular to a gully in a very rural area; the debris field was about 300 feet long. The first identified point of impact was a long narrow area of disturbed dirt, with the right wingtip nearby. Followed by two slash marks consistent with propeller blade slices, then a large area of disturbed dirt with propeller blade fragments. The main wreckage came to rest at the bottom of a gully, and the last piece of debris was the engine.

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## 1.1 Accident Site Photos



Figure 1: Overview of Accident Site



Figure 2: First Identified Point of Contact



Figure 3: Propeller Strikes



Figure 4: Large Area of Disturbed Dirt with Propeller Blade Fragments



Figure 5: Main Wreckage



Figure 6: Engine

## 2.0 Airframe Examination

- The airframe came to rest in a ball and exhibited heavy thermal damage.
  - The fabric was completely gone and only the airplane's frame remained.
- Flight control continuity was established throughout the airframe.
  - The rudder controls within the cockpit were unidentifiable. They were located in an area of heavily melted material.
- The instrument panel was fragmented.
  - The instruments were fracture separated and heavily damaged.
- The main landing gear wheels were found separate from the main wreckage.

## 2.1 Airframe Photos



Figure 7: Aft Fuselage and Empennage

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**Figure 8: Left Wing**



**Figure 9: Instruments**

### 3.0 Engine Examination

- The engine was found fracture separated from the airframe.
  - It came to rest nose down and upright.
  - The firewall was removed, and the engine was attached to an engine hoist for further examination.
- It exhibited extensive thermal damage and there were no visual signs of catastrophic anomalies.
- The propeller hub remained attached to the crankshaft flange.
- All spark plugs were removed and were consistent with normal operations.
- The valve covers were removed, and the valves were consistent with normal.
- The crankshaft was rotated by the propeller hub.
  - Internal engine continuity was established to the accessory section.
  - Thumb compression was established on all cylinders.
- The engine was borescoped.
  - The cylinder heads/walls, piston heads, and valves exhibited normal operating signatures.
- The exhaust tubes were bent aft, and the muffler was crushed.
- The right magneto flange was fractured; however, the magneto was rotated with a drill.
  - Spark was obtained on all leads.
- The left magneto exhibited extensive thermal damage and was unable to be rotated.
- The ignition harness exhibited impact damage and was unable to be tested.
- The vacuum pump was fractured from the flange and the drive was separated.
  - It was unable to be rotated.
- The engine driven fuel pump was partially consumed by fire.
- The oil pickup screen was removed and clear of debris.
- The fuel servo remained attached to the oil sump.
  - The engine controls were fracture separated consistent with impact.
  - The fuel inlet screen was removed and clear of debris.
- The fuel flow divider was disassembled.
  - The diaphragm remained intact, and fuel was found within the divider.
- The propeller governor rotated freely.
  - The screen was removed and clear of debris.
- The starter was fracture separated at its mounting flange.



### 3.1 Engine Photos



Figure 10: Accessory Section



Figure 11: Left Side of Engine



Figure 12: Magnetos



Figure 13: Fuel Servo



Figure 14: Propeller Governor

#### 4.0 Propeller Examination

- Both composite propeller blades were fracture separated at the blade root, and one blade was also fractured midspan.
- Both blades exhibited chordwise scratching on both the face and chamber sides.
- Both blades exhibited gouges in the trailing edge slightly inboard from midspan.

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#### 4.1 Propeller Photos



Figure 15: Chamber side of Propeller Blades



Figure 16: Face Side of Propeller Blades

END.

Submitted by: Samantha Link