

National Transportation Safety Board

Office of Aviation Safety

Washington, DC 20594



ERA23FA266

ACCIDENT ON SITE EXAM

June 12-13th 2023

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A. ACCIDENT

Location: Windsor Airport (63NY), Youngstown, NY
Date: June 11, 2023
Time: 1506
1906 (UTC)
Airplane: Harmon Rocket, N85TP

B. ACCIDENT ON SITE EXAM

NTSB IIC Aaron McCarter
 NTSB
 Washington DC

FAA Taylor Elia
 FAA/FSDO
 Rochester, NY

C. SUMMARY

During takeoff, the pilot initiated a steep climb out then performed a descending 180 degree turn back to the runway where he performed a low pass at high speed. After initiating a climb at the end of the pass, the pilot attempted a roll, but the airplane impacted trees about 400 to 500 feet north of the departure end of runway 36.

There are multiple witnesses and friends of the pilot who witnessed the accident.

D. DETAILS OF THE EXAMINATION

1.0 Accident Site

Windsor Airport (63NY) Youngstown, New York USA 400 feet from departure end of runway 36. Trees, 2 lane paved road, trees and corn farmland, level and muddy. Rain. Accident site was spread out over 450 feet from initial tree impact to the engine. Initial impact contained aluminum and fiberglass pieces of wreckage, an aileron, and misc. pieces of the airframe. The airplane entered a second row of trees before the wing tanks were compromised and there was a fire to the airplane that was quickly extinguished. Elevation was 300 feet. Lat/log 43.264321° / -78.966362° (figure 1) There were numerous branches and large diameter trees that exhibited features consistent with propeller slicing.

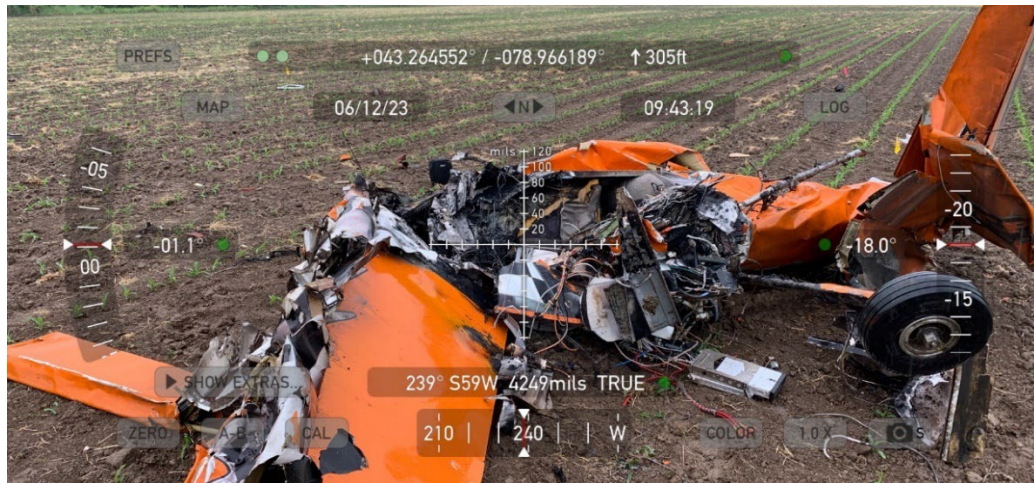


Figure 1 Accident site with location/direction details.



Figure 2 Wreckage path across road. Path is from left to right.

2.0 Airframe Examination

2.1 Fuselage

Fuselage buckled and crumpled with major deformation throughout and thermal/fire damage to the interior cockpit area. All primary flight controls and airplane components were discovered in the wreckage path. There were no missing items. The engine compartment was significantly compromised by impact forces, severing the engine from the firewall and engine mounts. The engine travelled another 175 feet further north bouncing 3 times before coming to rest as evidence from impact craters in

the ground. Holes were cut in the fuselage and wings to gain access to control rods/cables.

2.2 Empennage

All tail control surfaces were damaged and installed in their respective locations and moved manually with corresponding cable movement. A hole was cut into the fuselage to observe all control tubes. No anomalies or other irregularities were discovered. Rudder continuity was established from the rudder-to-rudder pedals. Stabilizer continuity was established from the stabilator to the main cabin area through overload breaks in the control rods.



Figure 3 View of empennage looking forward.

2.3 Wings

The left and right wing were bent aft and were partially detached from the fuselage at the forward attach point. The spar was significantly deformed. The aileron control tubes/rods were impact separated and had features consistent with overload. Left and Right aileron continuity was established from the control tubes. The left wing was crushed uniformly from the leading edge back to the wing spar.

2.4 Landing Gear

The fixed tailwheel left landing gear separated during impact.

2.5 Cockpit

The cockpit was destroyed by impact forces and fire.

2.6 Survivability

Extreme forces acted upon the airframe and pilot. The accident was not survivable.

2.7 Fuel/Fuel System

Fuel was atomized during the secondary tree impact spilling the contents and starting an impact related fire on the tree line and in the airplane. There was a smell of aviation fuel on scene and there was a large area of fuel blight to about 50 rows of corn. According to witnesses, there was 40 gallons of aviation fuel (100LL) on board. The fuel selector in the cockpit was selected to the left tank.

2.8 Other Systems

An electronic engine and performance unit was discovered in the cockpit instrument panel and was damaged. Sent to NTSB Recorders lab for examination and download.

- Advanced Flight Systems (AFS) AF-4500
- Dynon EFIS-D10A

3.0 Engine Examination

The powerplant is a six-cylinder, air cooled, direct drive, horizontally opposed, carbureted, naturally aspirated engine with a rating of 260HP @ 2700RPM. The Lycoming IO-540-B4B5, Serial Number L-7798-40 was severely impact damaged.

There was no evidence of fire damage to the engine, but it was subjected to extreme impact loads.

Both left and right magnetos were damaged.

Exhaust/manifold were impact separated from all 6 cylinders.

Accessories were damaged or separated and found in the debris field.

Five (5) of the spark plugs displayed normal coloration and normal electrodes as compared to the Champion Aerospace AV-27 Check-A-Plug chart. 5 spark plug insulators on the bottom of the engine were impact damaged. The top spark plugs were covered in oil but because the engine was discovered upside down.

The oil filter was opened, and the pleats contained no foreign debris or ferrous material. The oil appeared deep brown in color and all lubricated components appeared to be well lubricated.

Continuity of the crankshaft to the camshaft was confirmed throughout the engine.

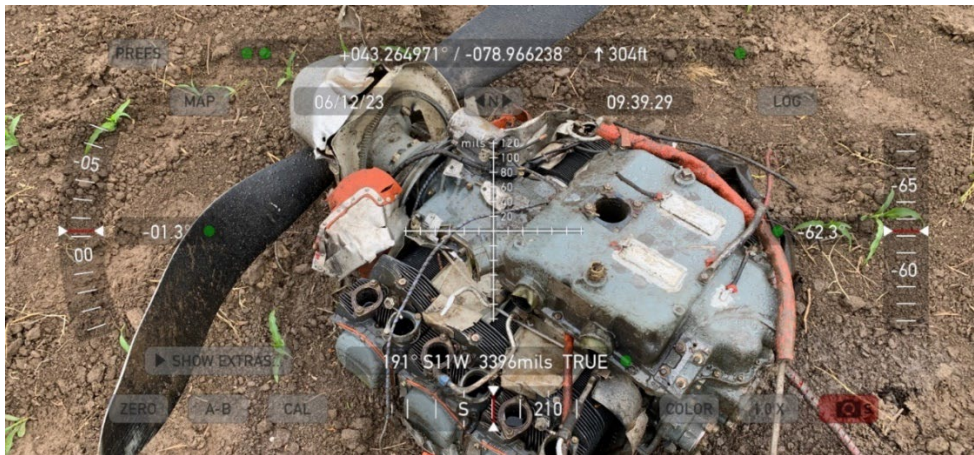


Figure 4 View of right bottom of the engine as discovered in the field.

4.0 Propeller Examination

Examination of the propeller revealed the 2-blade, Hartzell (HC-C2YK1BF) metal constant-speed propeller was missing a 5-inch section of blade that according to witnesses, had separated and landed on the concrete adjacent to the hanger with 1 witness stating that it came off before the impact.

Both blades were polished and showed evidence of chordwise scraping and one blade exhibited a wave bent through the entire span; this was the blade missing the tip. There was s-bending and significant leading edge gouges. The propeller remained attached to the flange and the propeller spinner was crushed. The propeller tip and a 10-inch portion of the blade that was cut off with a hot saw will be sent to the NTSB materials laboratory for examination.



Figure 5 Hartzell propeller exhibiting signs of s bending and polishing.

**DESCRIPTIONS OF ALL OPERATIONS
PERTAINING TO AIRWORTHINESS DIRECTIVES,
SERVICE BULLETINS, SERVICE LETTERS,
& MINOR ADJUSTMENTS**

DATE	TACH TIME	DESCRIPTION OF WORK	SIGNATURE
Hartzell HC-M2TR-1BF S/N 0853B Date: 02-17-22			
		Inspected Propeller, spinner and bulkhead as part of a conditional Annual inspection, no discrepancies. "I certify this propeller has been inspected as part of an Annual/Conditional Inspection and was determined to be in an airworthy condition this date."	
3/4/23	TACH: 1191.22 TSRPH: 109.42	INSPECT PROPPELLER AS PART OF THE CONDITION INSPECTION. NO DEFECTS NOTED I CERTIFY THAT THIS PROPPELLER HAS BEEN INSPECTED IN A PART OF MY AIRCRAFT AND FOUND TO BE IN A CONDITION FOR SAFE OPERATION.	MICHAEL FROMM JR. [Signature]

Figure 6 Propeller Maintenance log, last entry.

5.0 Pilot Information

The pilot, [REDACTED], had a class 1 medical 12/12/2022. Based on his logbook the pilot had about 2,656 hours of total flight time and unknown number of hours in the make model. He was also an agricultural pilot and according to friends/witnesses he owned a Stearman biplane.

Figure 7 Pilots most recent page from his logbook.

6.0 Aircraft Information

Harmon Rocket

N85TP
2 seats tandem
MGW: 2,000 lbs
Serial #: 2828

7.0 Meteorological Information

Location.....: CYSN
Day of month.....: 11
Time.....: 19:00 UTC
Wind.....: true direction = 050 degrees; speed = 9 knots
Visibility.....: 12 Statute Miles
Cloud coverage.....: overcast (8 oktas) at 11000 feet above aerodrome level
Temperature.....: 23 degrees Celsius
Dewpoint.....: 12 degrees Celsius
QNH.....: 29.77 inHg

Remarks
Unknown Remark token: AC8
Sea Level Pressure...: 1008.3 Mb
Unknown Remark token: DENSITY
Unknown Remark token: ALT
Unknown Remark token: 1500FT

8.0 Engine and Airframe MX Documentation

Maintenance logbooks were recovered during the on scene portion of the investigation by the FAA. The propeller logbook excerpt is above.

DATE	TOTAL TIME IN SERVICE	TOTAL TIME SINCE OVHL	TACH OR RECORDING METER TIME	DESCRIPTION OF WORK PERFORMED SIGNATURE & CERTIFICATE NO. OF PERSON PERFORMING WORK
XXXXXX				Totals Brought Forward From Previous Page
Lycoming IO-540-B4B5 S/N: L7798-40 MAC AVIATION 12686 Blueberry Way Culpeper, Va 22701				
Date: 02-17-22 TACH: 1116.5 T50A: 175.6 Performed annual/conditional inspection in accordance with Lycoming maintenance manual. Checked engine timing. Inspected, cleaned, gapped and rotated spark plugs. Inspected engine compartment, controls, mounts, and exhausts. Inspected fuel screen for contaminants, none found. Engine Compressions: #1-74/80, #2-74/80, #3-74/80, #4-75/80, #5-78/80, 6-74/80. Drained oil and inspected screen for contamination, none found. Serviced engine with Phillips 20W50. Post inspection run up and leak check good. "I certify this engine has been inspected as part of an Annual/Conditional Inspection and was determined to be in an airworthy condition this date. [Redacted Signature]				
3/1/23	TACH: 1194.2	PERFORMED	CONDITION INSPECTION	ON THIS ENGINE SAW FAR PART 43 APPENDIX D.
TSMCH: 217.2 REMOVED SPARK PLUGS, CLEANED & PERFORMED COMPRESSION CHECK. #1-75/80 #2-74/80 #3-76/80 #4-77/80 #5-76/80, 6-75/80. INSTALLED IN SPARK PLUGS. DRAIN-OIL OIL AND CUT OPEN OIL FILTER, NO DEFECTS NOTED. SERVICED ENGINE WITH PHILLIPS 20W50. GROUND RAN AIRCRAFT, OPS CHK GOOD, NO LEAKS NOTED. I CERTIFY THAT THIS ENGINE HAS BEEN INSPECTED IN FAR PART 43 APPENDIX D AND FOUND TO BE IN A CONDITION FOR SAFE OPERATION. MICHAEL FACHKO JR [Redacted Signature]				

[illegible]

Submitted by:

McCarter, Lawrence Aaron
Aviation Accident Investigator IIC