

# National Transportation Safety Board

Office of Aviation Safety

Washington, DC 20594



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## **AIRFRAME AND ENGINE EXAMINATION**

November 19, 2024

## TABLE OF CONTENTS

A. ACCIDENT.....	3
B. AIRFRAME AND ENGINE EXAMINATION.....	3
C. SUMMARY.....	3
D. DETAILS OF THE EXAMINATION.....	3
1.0 AIRFRAME EXAMINATION.....	3
2.0 ENGINE EXAMINATION .....	4
3.0 PROPELLER EXAMINATION .....	6
4.0 AIRCRAFT INFORMATION .....	6

## **A. ACCIDENT**

Location: Meeteetse, Wyoming  
Date: September 1, 2024  
Time: 11:02 Mountain Daylight Time  
Airplane: N23BD, American Champion Aircraft, 8GCBC

## **B. AIRFRAME AND ENGINE EXAMINATION**

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## **C. SUMMARY**

On September 1, 2024, about 1102 mountain daylight time, an American Champion Aircraft 8GCBC, N23BD, was substantially damaged when it was involved in an accident near Meeteetse, Wyoming. The pilot sustained serious injuries and passenger was fatally injured. The airplane was operated as a Title 14 Code of Federal Regulations Part 91 personal flight.

Examination of the accident site revealed that the airplane impacted mountainous terrain along the southern edge of a valley about 37 miles southwest of the Yellowstone Regional Airport (COD), Cody, Wyoming. The fuselage came to rest upright with several tree limbs lying against the fuselage, on a heading of about 240° magnetic at an elevation of 9850 ft msl.

## **D. DETAILS OF THE EXAMINATION**

### **1.0 Airframe Examination**

Examination of the fuselage at the accident site revealed that it was thermal and impact damaged. Flight control continuity had been established from the cockpit torque tube and rudder pedals to the flight control surfaces.

The fuel system from the wings to the engine was destroyed by post accident fire.



**Figure 1: Front view of accident airplane fuselage.**

## **2.0 Engine Examination**

Engine Manufacturer: Lycoming  
Engine Model Number: O-360-C1G  
Engine Serial Number: L-41479-36E

The engine was separated from the engine mount and fuselage during the accident site examination. Thermal damage was observed throughout the engine from post impact fire.

The rocker box covers had been removed during the accident site examination. The intake and exhaust rocker arms were intact, and debris consistent with post accident fire was observed on all cylinders. All intake and exhaust valve springs were in place and visually appeared to be undamaged.



**Figure 2: Front view of engine during examination.**

The No. 1 and 3 cylinders had been removed from the engine crank case during the accident site examination. The No. 2 and 4 cylinders were removed from the engine crank case. Debris consistent with post accident fire was observed in the combustion dome of all cylinders. Normal amount of carbon deposit was observed on the piston face of all pistons. Using a hand tool, the engine crank shaft was rotated and binding was noted.

The oil sump was mostly destroyed by post accident fire. The remaining oil sump was removed to facilitate the crank case disassembly. The crank case was disassembled and the engine crank shaft and cam were removed. Thermal damage was observed to the cam shaft throughout. Corrosion was observed on all intake and exhaust lifters, preventing movement. The crank shaft appeared to be slightly bent about mid span, consistent with impact damage. The slight bend in the crank shaft was consistent with the binding during rotation. No scoring was observed on the crank case journals or bearings. The connecting rods remained attached to the crank shaft, were void of lubrication and rotated with slight resistance, consistent with post accident fire.

Both magnetos were mostly destroyed and thermal damaged. Neither magneto would rotate and could not be functionality tested.

The accessory had been separated during the accident site examination and was thermal damaged. The engine driven oil pump was present but thermally damaged and could not be removed from the accessory case, consistent with post accident fire damage.

### 3.0 Propeller Examination

Manufacturer: MT  
Model Number: MTV-15-B1203-58  
Hub Serial Number: 080453

The airplane was equipped with a constant speed two blade wood propeller. The propeller and propeller hub remained attached to the crankshaft. The propeller hub was separated from the crank shaft and remnants of the propeller blades were observed within the propeller hub.

### 4.0 Aircraft Information

According to the airplane logbooks. The engine was manufactured in December of 2008. During the last annual inspection that was conducted on December 1, 2023 the engine hours were about 596 hours.

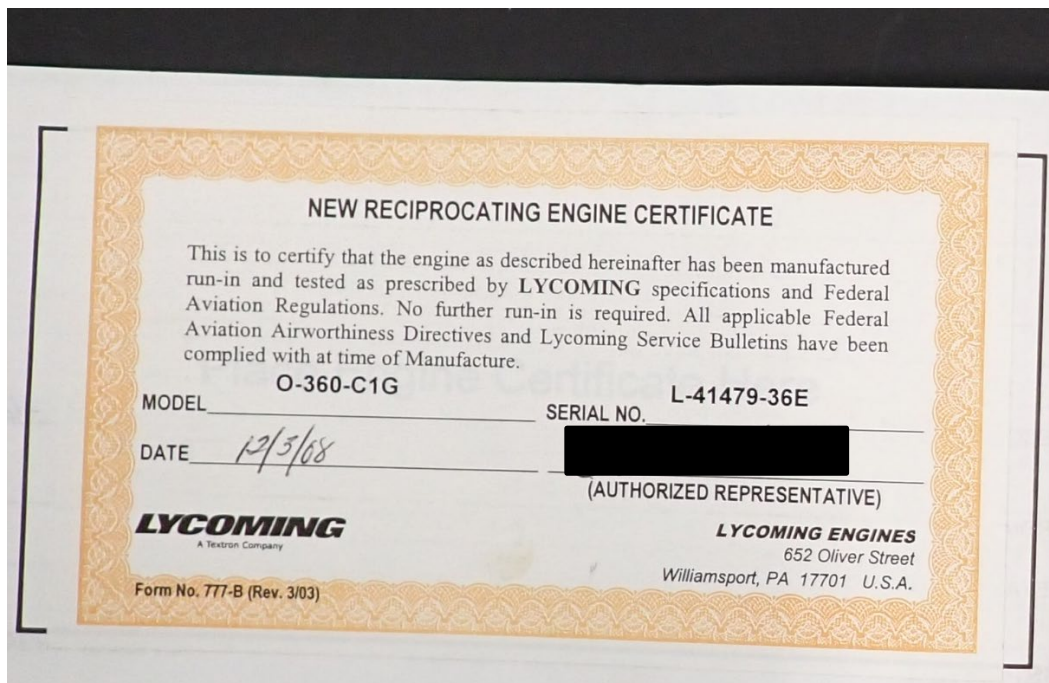


Figure 3: View of engine certificate.

ENGINE DESCRIPTION			
Mfgr.	LYCOMING	Place	Williamsport, PA 17701
Type		Date	9-8-2009
Rated H.P.	180	Model	O-360-C1G
Rated R.P.M.	2700	Serial No.	L-41479-36E
Bore	5.125	Max. H.P.	180
Compression Ratio	8.5:1	Weight (Dry)	292
Reduction Gear Ratio		Oil Pressure	90 PSI
Propeller	MTV-15-B/203-58	Max. R.P.M.	2700
Blade Design	203-58	Displacement	361.0 Cu. In.
Hub Design	MTV-15-B	Supercharger Ratio	
Blade Serial No.	ZF-35805	Hub Serial No.	080453
Max. Hub H.P.		Blade Serial No.	ZF-35806
Pitch		Max. Blade H.P.	
Name		Diameter	
Address		Length	

Figure 4: View of engine logbook.

ENGINE LOG		Serial No.
Lycoming O-360-C1G	<b>GWWood Aviation</b> [REDACTED] Casper, WY 82604 [REDACTED]	Date: 12-01-2023
Reg. No: N23BD		ACTT: 596.5
Ser. No: L-41479-36E		Eng. Hours: 596.5
<b>Engine Entry:</b> Completed an Annual/100Hr inspection referencing American Champion inspection checklist and FAR 43 App. D. Completed an AD check with no new AD's due at this time. Drained oil, removed filter and cut open with no contaminants found, installed new filter AA48110-2 and serviced with 08 qts of Aeroshell 15W50 oil. Removed, cleaned, inspected, gapped and rotated spark plugs.. Checked magneto timing. Completed compression check with the following results: #1-72/80, #2-78/80, #3-76/80, #4-78/80. Removed and inspected fuel gascolator assy. With no contaminants found, re-installed. I certify that this engine has been inspected and found to be in an airworthy condition, and that all operational and leak checks have been completed and found to be satisfactory.		
Signed: [REDACTED]	A&P [REDACTED]	Date: 12-01-2023
Total to Date		Certificate Number MUST be Shown.

Figure 5: View of engine logbook.

Submitted by:

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 Air Safety Investigator