

National Transportation Safety Board

Office of Aviation Safety

Washington, DC 20594



WPR24FA291

ACCIDENT SITE EXAMINATION

September 3, 2024

TABLE OF CONTENTS

A. ACCIDENT.....	3
B. ACCIDENT SITE EXAMINATION	3
C. SUMMARY	3
D. DETAILS OF THE EXAMINATION.....	3
1.0 ACCIDENT SITE	3
2.0 AIRFRAME EXAMINATION.....	4
3.0 ENGINE EXAMINATION	7
4.0 PROPELLER EXAMINATION	10
5.0 METEOROLOGICAL INFORMATION	10

A. ACCIDENT

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

B. ACCIDENT SITE EXAMINATION

IIC Eric M. Gutierrez
National Transportation Safety Board
Federal Way, Washington

Party Coordinator Dave Harsanyi
Lycoming Engines
Williamsport, Pennsylvania

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.

D. DETAILS OF THE EXAMINATION

1.0 Accident Site

GPS Location: 44.006269 -109.293412

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 first identifiable point of contact (FIPC) was a 150 to 175 ft tall tree that had damaged limbs near the top of the tree. The debris path was oriented on a heading of about 210° magnetic and was about 200 ft in length from the FIPC. Various portions of airplane surface, and propeller fragments were observed throughout the debris path. Additionally, several trees were damaged throughout the debris path. 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.



Figure 1: View of damaged treetops near accident site.

2.0 Airframe Examination

N23BD - American Champion Aircraft 8GCBC

SR# 517-2009

Hobbs: Not observed

Tach: Not observed

Examination of the fuselage revealed that it was thermal and impact damaged. The fuselage came to rest upright on uneven mountainous terrain on a magnetic heading of about 240°. The instrument panel was thermal and impact damaged with instruments separated. Flight controls were only observed in the forward seat station. The forward flight control was fracture separated at the torque tube attachment point. The landing gear was separated from the fuselage and thermally damaged.

The flight control stick was retained for further examination.



Figure 2: Front view of accident airplane.

The left wing separated from the fuselage near the wing root and was mostly destroyed by fire. The left wing aileron and flap were mostly destroyed by fire. The flight control cables remained within the fragmented left wing and traced from the aileron attached points to the center fuselage. The left wing aluminum fuel tank was mostly destroyed by fire. Aluminum pooling was observed throughout the left wing area.



Figure 3: View of left wing thermal damage.

The right wing separated from the fuselage near the wing root and was mostly destroyed by fire. The right wing aileron and flap were mostly destroyed by fire. The flight control cables remained within the fragmented right wing and traced from the aileron attached points to the center fuselage. The right wing aluminum fuel tank was mostly destroyed by fire. Aluminum pooling was observed throughout the right wing area.



Figure 4: View of right wing thermal damage.

The empennage remained attached to the fuselage and was thermal damaged throughout. The elevator remained attached to the horizontal stabilizer. The elevator flight control cables remained attached to their respective mounts, the control cables were traced to the cockpit and where attached to the flight control torque tube. The rudder was thermal damaged throughout. The rudder flight control cables remained attached to their respective mounts, the control cables were traced to cockpit, where they remained attached to the rudder pedals.



Figure 5: Rear view of empennage.

3.0 Engine Examination

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

The engine remained attached to the engine mount and fuselage. No damage was noted to the steel engine mount tubes. Thermal damage was observed throughout the engine from post impact fire. The engine was covered in burned fiberglass cowl remains which appeared to all be draped over the engine area only.



Figure 6: View of airplane engine.

The engine's alternator and starter remained attached to the engine, but were not functionally tested during the examination. Thermal and impact damage was observed on both left and right ignition harness. Thermal and impact damage was observed to all induction tubes and exhaust tubes.

Both magnetos were mostly destroyed and thermal damaged. The left-hand magneto remained attached to the rear of the engine, but outside of the accessory case and was only attached by solidified aluminum. The right-hand magneto was found underneath the engine, but largely consumed by fire and in a solidified pool of aluminum. Neither magneto would rotate and could not be tested for functionality.



Figure 7: View of left and right magnetos.

The engine's carburetor was separated from the oil sump and was consumed by thermal damage. Both the steel throttle arm and steel mixture arm were present within the solidified aluminum, but the floats and fuel inlet screen could not be located or examined. Control cable continuity was confirmed from the cockpit to the throttle arm and mixture arm with no breaks.

No fuel pump was present on the accessory section of the engine. No vacuum pump was present on the accessory section of the engine.

The accessory case was partially consumed by fire and was removed from the engine case. The engine driven oil pump was present but thermally damaged and could not be removed from the accessory case. The oil sump was largely consumed by fire exposing the oil suction screen that was found free and clear of any debris at the time of the examination. The canister type oil filter was found separated from the rear of the engine but recovered within the aircraft wreckage. The oil filter was cut open exposing the burnt remains of the filter pleats, no metallic debris was noted within the filter remains.



Figure 8: View of engine's accessory case.

The rocker box covers were removed. 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. The top engine spark plugs were removed from the engine, and they

were the massive electrode type. All spark plugs exhibited gray deposits within the electrode area. The spark plugs exhibited signatures consistent with WORN NORMAL when compared to the Champion Check-A-Plug comparison chart.

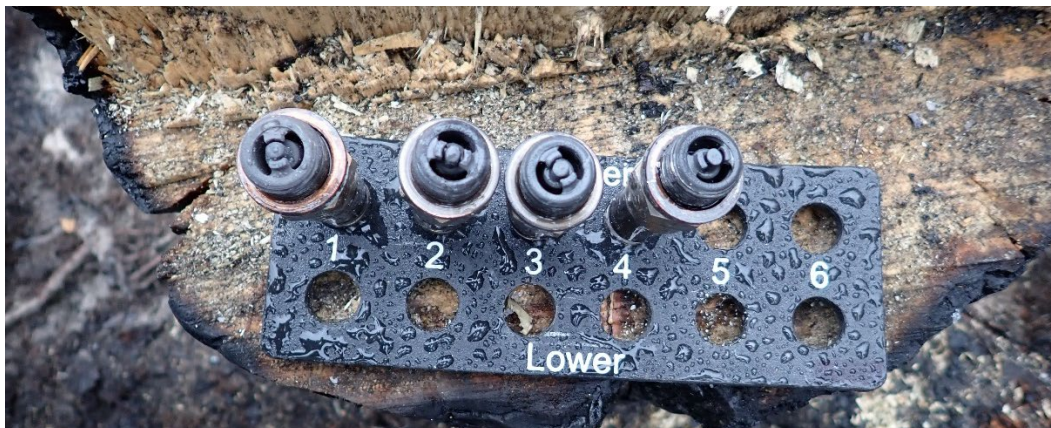


Figure 9: View of top engine spark plugs.

The number 1 and 3 Cylinders were removed from the engine case along with loosening all engine case bolts in an attempt to relieve any thermal damage forces present within the engine. Crankshaft rotation was attempted through the prop governor drive port, but full engine rotation was not achieved. Both idler gears were removed from the rear of the engine which allowed full camshaft rotation, but crankshaft rotation was not achieved.

The muffler was cut free from the engine and examined. The flame tube was present and not dislodged from its normal location.

4.0 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. Both propeller blades were mostly destroyed by fire, remnants of the propeller blades were observed within the propeller hub.

5.0 Meteorological Information

KCOD 011656Z AUTO 28005KT 10SM CLR 23/03 A3028 RMK AO2 SLP202
T02330033

At 1656Z (1056 L), the automated weather observation station at KCOD reported wind from 280° at 5 knots, visibility 10 statute miles, sky clear, temperature 23°C, dew point 3°C, and an altimeter setting of 30.28 inches of mercury.

Submitted by:

Eric M. Gutierrez
Air Safety Investigator