

National Transportation Safety Board

Office of Aviation Safety

Washington, DC 20594



WPR24FA226

ONSCENE AND WRECKAGE EXAMINATION REPORT

July 7, 2024

TABLE OF CONTENTS

A. ACCIDENT.....	3
B. PARTICIPANTS.....	3
C. SUMMARY	3
D. DETAILS OF INVESTIGATION.....	4
1.0 ACCIDENT SITE	4
2.0 AIRFRAME EXAMINATION.....	4
2.1 Fuselage.....	4
2.2 Empennage	4
2.3 Wings.....	4
2.4 Landing Gear.....	4
2.5 Flight Control System	4
3.0 ENGINE EXAMINATION	5
4.0 AIRPORT INFORMATION	6

A. ACCIDENT

Location: Eatonville, Washington
Date: July 6, 2023
Time: 2122 Pacific Daylight Time
Airplane: Champion 7GCBC, Registration N3464D

B. PARTICIPANTS

IIC Stephen Stein
National Transportation Safety Board
Federal Way, Washington

Investigator Kathryn Whitaker
National Transportation Safety Board
Federal Way, Washington

C. SUMMARY

On July 6, 2024, at about 2122 Pacific daylight time, a Champion 7GCBC, N3464D, was substantially damaged when it was involved in an accident near Swanson Airport (2W3), Eatonville, Washington. The pilot and passenger were fatally injured. The airplane was operated as a Title 14 *Code of Federal Regulations* Part 91 personal flight.

A witness, who was located about 500 ft southwest of the departure end of runway 16 at 2W3, stated that he heard the airplane perform an engine run-up and then take off. The airplane overflowed his location at an altitude that was lower than he expected. The witness added that after the airplane flew out of his line of sight, he heard the airplane's engine "cut out," followed by the sound of a crash.

Two additional witnesses, who were about 1,900 ft northwest of the accident site, observed the accident airplane flying southbound. Both witnesses described the airplane as being about 10 ft above the treetops and lower than an adjacent ridgeline. The witnesses said that the airplane was slow as it maintained a nose high attitude, and the engine was producing smooth and continuous power. The airplane then performed a turn to the left, rolled inverted, and disappeared out of their line of sight below a tree canopy. The witnesses added that the sound of the engine stopped before the airplane impacted the trees.

The airplane came to rest in a nose down attitude within a forested area about 0.5 nm south of the departure end of runway 16. All major components of the airplane were accounted for at the accident site. The airplane exhibited extensive impact damage

and aft crush deformation to the forward portion of the fuselage and leading edges of both wings. The wings remained partially attached to the fuselage and the tail section was folded upward and to the left. Both the engine and propeller were buried in the ground beneath the wreckage. The accident site was at an elevation of 803 ft mean sea level (msl), with rising mountainous terrain located to the south and east that varied in elevation between 1,200 ft and 1,400 ft msl.

D. DETAILS OF THE INVESTIGATION

1.0 Accident Site

The airplane came to rest inverted in a wooded area approximately 0.5 nm from the departure end of runway 16 on an orientation of 338° magnetic. All major structures were accounted for at the accident site. The wreckage was surrounded by trees; however, a walkthrough of the surrounding terrain did not reveal any localized tree strikes or obstacle impact signatures. The cockpit was splayed open and unrecognizable; the engine was embedded in the ground beneath the cockpit.

2.0 Airframe Examination

2.1 Fuselage

The fuselage was fragmented by first responders during the occupant recovery effort. Both wings were broken at the wing roots. The aft fuselage structure was intact and remained attached to the empennage.

The airplane gascolator sump valve was found in the open position.

2.2 Empennage

The empennage was intact and comprised of both horizontal stabilizers, elevators, the vertical stabilizer and the rudder. The elevator trim tab remained attached to the left elevator and exhibited an upward deflection, but moved freely when actuated by hand. The left horizontal stabilizer was damaged.

2.3 Wings

The left aileron and flap were attached to the left wing, which separated from the fuselage at the wing root. The cloth skin was torn throughout the wing, which was broken at the aft wing spar near the outboard wing. The left wingtip was deformed and exhibited multiple compression wrinkles. A large bend was observed in the left aileron about midspan that was collocated with the fracture in the aft spar. The left flap also exhibited a bend about midspan.

The right wing was separated from the fuselage at the wing root and both the forward and aft spars were fractured. Both the right flap and aileron remained attached to the right wing. The wing displayed secondary fractures in the forward and aft spars about midspan. The outboard section of the wing (including the aileron) was curled almost 180° and compression wrinkles were observed throughout the leading edge. The inboard section of the right wing was crushed.

A faint odor of 100 low lead aviation grade gasoline was observed beneath the right wing.

2.4 Landing Gear

The tailwheel remained attached to the empennage. The left main landing gear remained attached to the left gear leg, which was collocated with the wreckage. The right main landing gear leg was adjacent to the left gear; however, the wheel was not identified at the accident site.

2.5 Flight Control System

Continuity of the left and right ailerons was traced from the flight control surface to the cockpit where the cables had been cut by first responders. The elevator and rudder control cables were traced from their respective control surfaces to the cockpit and were also cut by first responders. Both flight control sticks had separated from their cockpit mounts. The front seat occupant flight stick remained within the cockpit area and the rear seat occupant flight control stick was located forward of the front seat flight stick and was resting on top of the engine compartment. Both front seat rudder pedals and heel brakes were located forward of the main wreckage with the left pedal interconnect still attached to the rear seat left rudder pedal.

3.0 Engine Examination

Engine Manufacturer: Lycoming

Engine Model Number: O-320-B2B

Engine Serial Number: L-5013-39

100 hour / Annual inspection conducted: 100-Hour, March 18, 2024

Tachometer: 1294.41 hrs

Last Overhaul: TSO: 461.15 hrs

The engine remained attached to the engine mounts and the engine firewall was wrapped around the engine accessory case and the baffling was wrapped around the engine. Several exhaust and intake tubes were crushed along with both exhaust manifolds. The crankcase was intact with no evidence of catastrophic internal failure. The propeller remained attached to the crankshaft at the propeller flange and exhibited limited rotation by hand. The propeller rotated smoothly with a hand tool at

ONSCENE AND WRECKAGE EXAMINATION REPORT

the propeller flange after the propeller was removed. Mechanical continuity was achieved and normal valve lift was observed at each of the valves with exception of the no. 2 intake valve, which had limited movement due to a bent push rod.

The left magneto remained attached to its mounting pad and all of its ignition leads were attached at the magneto housing. The right magneto was fractured and remained partially attached to its mounting pad and three of its four ignition leads were attached at the housing. The left and right magnetos displayed spark as the magneto drive was rotated by hand. Both the bottom and top spark plugs and ignition leads were attached to cylinders 1 and 3. The cylinder 2 bottom and cylinder 4 top and bottom spark plugs remained attached with their respective ignition leads. The cylinder 2 top spark plug had separated from the cylinder port and the electrode remained inside the cylinder.

The top and bottom spark plugs were manufactured by Tempest, model UREM40E massive electrode plugs. The bottom plugs to cylinders 1 and 2 were pinned in place by exhaust and intake tubes. Each of the other plugs exhibited coloration consistent with normal wear.

The carburetor case had partially separated, and a section of the case remained attached to the airbox while the other section remained attached to the mounting pad at the plenum. Part of the carburetor case was separated exposing the carburetor bowl. The carburetor floats remained securely attached within the carburetor bowl, which was devoid of fuel. The float screen was free of debris. The throttle arm remained attached to the carburetor case at the engine. The throttle control linkage remained attached to the throttle arm with all of its securing hardware in place. The mixture control arm was attached to the carburetor section that had separated from the engine. The mixture control linkage securing hardware was in place, but the linkage had fractured at the arm.

The propeller remained attached to the engine crankshaft. The spinner was crushed. Both propeller blades remained attached to the propeller hub and exhibited limited rotation. The blades were both straight and did not display any nicks, gouges, or chordwise scratches.

4.0 Airport Information

The pilot departed Swanson Airport (2W3), Eatonville, Washington about 2115. The airport's sole asphalt runway was 2,990 ft long and 36 ft wide in a 16/34 configuration. The FAA chart supplement published May 16, 2024 notes "Trees. Rgt tfc [right traffic]" for runway 16. A ridgeline that ran east/west and about 1,400 ft tall was located about 1 nm south of the airport in the path of runway 16.

Submitted by:

Stephen Stein
Senior Aviation Accident Investigator