



NATIONAL TRANSPORTATION SAFETY BOARD

Office of Aviation Safety

Western Pacific Region

January 31, 2022

ONSCENE EXAMINATION

WPR21FA044

This document contains 4 embedded photos.

(8 Pages)

A. ACCIDENT

Location: Grass Valley, California

Date: November 10, 2020

Aircraft: Piper PA-38-112

NTSB IIC: Stephen Stein

B. EXAMINATION PARTICIPANTS

Stephen Stein
Aviation Accident Investigator (IIC)
National Transportation Safety Board
Federal Way, Washington

Brook Stewart
Aviation Safety Inspector
Federal Aviation Administration
Sacramento, California

C. DETAILS OF THE INVESTIGATION

HISTORY OF FLIGHT

On November 10, 2020, about 1540 Pacific standard time, a Piper PA-38-112 airplane, N6380A, was substantially damaged when it was involved in an accident near Grass Valley, California. The pilot, and sole occupant, was fatally injured. The airplane was operated as a Title 14 *Code of Federal Regulations* Part 91 personal flight.

The owner of the accident airplane stated that the airplane was stored in a hangar at his home airport, the pilot's departure airport, Cameron Park, California. Preliminary automatic dependent surveillance-broadcast (ADS-B) data obtained through a commercially available third-party contained three different tracks that began the day of the accident about 1028 from the pilot's departure airport. The first track showed the pilot depart to the northwest from the pilot's departure airport and turn to a southwesterly heading. He reached his next destination, University Airport (EDU), Davis, California, about 1100. The second ADS-B track was picked 23 minutes later during the pilot's departure from EDU. The data showed that he flew to an area east of the airport where he performed numerous turns, climbs, and descents and subsequently returned to EDU approximately 1200 and performed two circuits in the airport traffic pattern. The second ADS-B track terminated about 1210. According to the final track, the pilot departed EDU about 1419 and flew a northerly heading for about 35 nm, turned northeast and flew an additional 31

nm to an intermediate airport in Oroville, California. The pilot performed a touch and go maneuver and then departed to the southeast. He established a cruise altitude of 5,500 ft mean sea level about 1523 and maintained the southeasterly heading. At 1533:49 he passed an airport in Grass Valley, California about 2 minutes before he made a slight right turn to a southern heading. At 1536:25 the pilot executed a 180° right turn to the north as the airplane began to descend. The pilot subsequently made a 180° left turn about 2 minutes later, at which point the ADS-B data ceased at 1539:22, approximately 1,700 ft west of the accident site.

PERSONNEL INFORMATION

The pilot, age 30, held a commercial pilot certificate with rating for airplane multi-engine land, and instrument airplane. His most recent first-class medical certificate was issued on July 28, 2020, which did not include any limitations. At the time of the examination, the pilot reported that he had accumulated 340 total flight hours and 6 hours in the previous 6 months.

AIRCRAFT INFORMATION

Federal Aviation Administration records showed that the airplane was manufactured in 1978 and was registered to a private individual on October 10, 2010. The airplane was powered by a Lycoming Engines O-235, an air cooled, reciprocating engine. According to the owner, the airplane's most recent annual inspection was completed on September 2, 2020 at a tachometer time of 2,259.91 flight hours, approximately 33 hours prior to the accident.

METEOROLOGICAL INFORMATION

The 1535 recorded weather observation at Nevada County Airport, Grass Valley, California included wind 230° at 3 knots, visibility 10 statute miles, temperature 11° C, dew point -5° C, and an altimeter setting of 30.13 inches of mercury.

WRECKAGE AND IMPACT INFORMATION

The airplane was located in wooded terrain at an elevation of about 2,710 ft mean sea level. All major sections of the airplane were accounted for at the accident site. The initial impact point (IIP) was marked by a severed tree that displayed an impact mark about 15 ft up from its base. The accident airplane was inverted and intact, oriented on a heading of 048° magnetic. The orientation between the IIP and main wreckage was 094° magnetic.

Both propeller blades remained attached to the engine crankshaft and were each bent aft slightly. However, neither blade exhibited any nicks, gouges, or chordwise striations.

Wings

The right wing was intact and remained attached to the fuselage, but exhibited deformation throughout its lower and upper skins. A depression that measured about 14.5 inches was observed about midspan and collocated with several broken tree branches. The outboard leading edge was crushed. The left wing was intact and remained attached to the fuselage and exhibited a

small depression along the leading edge at the wing root and a partial chordwise separation about midspan.

A moderate odor that resembled 100 low lead aviation grade gasoline was observed below the right wing and no odor was observed below the left wing. When moved by hand a liquid was heard moving within the right wing fuel tank. No audible sound was observed in the left fuel tank when the wing was moved and no fuel was discharged from the left tank in its inverted position when the fuel cap was removed.

Fuselage & Cockpit

The cowling was vertically crushed and canted to the right. Both doors and door posts in the main cabin were destroyed and the instrument panel was crushed. Most of the gauges and indicator positions could not be determined due to airplane's inverted position; however, the following observations were made:

Vertical speed indicator: 390 fpm up
Tachometer: 20 rpm; 2,293.34 hours
Throttle position: full forward
Mixture position: full rich
Fuel selector: L tank
Circuit breakers: none popped
Oil temp: no reading
Oil pressure: no reading
Alt amps: 0 amp
Fuel pressure: no reading
Transponder: 7700
Ignition: Undetermined due to position
Altimeter: 780 ft mean sea level
Kollsman window: 30.1X

The throttle control, mixture control, and fuel selector were seized.

The emergency locator transmitter was an AMERI-KING Corp Model AK-450, FAA TSO C91a.

Tail & Empennage

The empennage was slightly deformed at the vertical stabilizer junction, but was otherwise intact and comprised of the vertical stabilizer, rudder, horizontal stabilizer, and elevators, which all displayed numerous compression wrinkles. The forward cap on the lower leading edge of the vertical stabilizer was partially separated.

Engine

The engine was mostly intact with the exception of the carburetor, which had fractured near its engine mount. The mixture and throttle control cables remained attached to the carburetor and

were continuous to the firewall as was the carburetor heat cable, which was still connected to the airbox. Each of the four bottom spark plugs were secured along with their ignition coils. The top spark plugs could not be viewed due to the airplane's inverted position. Only two ignition coils were removed from their spark plugs, and neither exhibited any unusual wear.

The propeller rotated with ease by hand, but its movement was restricted due to their proximity to the ground.



Photograph 1: Main wreckage



Photograph 2: Depression in right wing and tree remnants



Photograph 3: Initial impact point (tree)



Photograph 4: Propeller blades and uncowed engine