



NATIONAL TRANSPORTATION SAFETY BOARD

Office of Aviation Safety
Western Pacific Region

Date: December 7, 2020

SUMMARY OF AIRPLANE EXAMINATION

WPR19FA116

This document contains 1 embedded photo

A. ACCIDENT

Location:	Brookings, Oregon
Date:	April 18, 2019
Aircraft:	Vans RV-8A
NTSB Investigator-in-Charge	Thomas M. Little

B. EXAMINATION PARTICIPANTS

Thomas M. Little
Senior Aviation Accident Investigator
National Transportation Safety Board
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Federal Way, Washington

Joseph Mollahan
Aviation Safety Inspector
Federal Aviation Administration
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Principal Inspector, Avionics
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C. SUMMARY

On April 18, 2019, about 1615 Pacific daylight time, an experimental, amateur-built Vans Aircraft RV8A, N791PF, was substantially damaged following an inflight loss of control and subsequent impact with terrain about one-half nautical miles (nm) northwest of Brookings Airport (BOK), Brookings, Oregon. The commercial pilot and his sole passenger were fatally injured. The airplane was registered to and operated by the pilot under the provision of Title 14 *Code of Federal Regulations* Part 91. Visual meteorological conditions prevailed, and no flight plan was filed for the local personal flight that originated at Grants Pass Airport, Grants Pass, Oregon. The time of departure has not been determined at this time.

A witness who was driving down the west side of the field at BOK and parallel to runway 30/12, reported that he watched the airplane make a touch-and-go landing, which was not unusually hard or out of control; the sound of the engine was normal and smooth. The airplane then passed about 300 [to his left] before going out of site. At that time, he did not recall the N number, but was informed later that it was N791PF.

A second witness, who was positioned in a lumber yard about 1 nm northwest of BOK, reported that he observed the airplane inflight about 500 to 800 ft above the ground and heading north. He then observed the airplane make a turn back to the south, maintaining the same altitude, but could not remember which way it turned. Shortly thereafter, the airplane reversed course again to the north, which was then followed by the airplane rolling over on its right side, from which the airplane's belly/undercarriage was visible to the witness. At that point the airplane nosed over and descended straight down before going out of sight in a bush and tree-covered ravine.

An onsite examination the following morning by a Federal Aviation Administration aviation safety inspector, revealed that the airplane had impacted terrain in a "near vertical attitude", and came to rest in the ravine in an upright and nose-down attitude. There was no postcrash fire. On April 20, 2019, the airplane was recovered to a secured location for further examination.

D. DETAILS OF THE EXAMINATION

1.0 Accident Site Examination

An onsite examination of the airplane was performed by representatives from the NTSB and the FAA on April 20, 2019. The assessment of the wreckage revealed that the airplane came to rest in a thick, brush covered ravine on a slope of about 20°, in an upright orientation on a magnetic heading of about 170°. This location was about 3,400 ft northwest of the departure end of the runway 30 from which the pilot had just performed touch-and-go landing. The airplane came to rest intact after having impacted terrain in a steep nose-down attitude, with substantial damage observed throughout the airplane. There was no postcrash fire. The airplane was recovered from the accident site on April 20, 2019.



Figure 1 - photo of accident site

2.0 Follow-up examination notes

The following examination notes were generated as a result of a post-recovery follow-up/layout examination of the airplane, which was performed at the facility of Nu Venture Aircraft Services, Dallas, Oregon, on May 23, 2019. The examination was conducted by representatives from the NTSB and the FAA, with the assistance of a Nu Venture airframe and powerplant mechanic.

2.0.1 Airframe examination notes

A postaccident investigation of the airframe revealed the following by the NTSB IIC revealed the following:

General assessment

The cabin/cockpit area was destroyed by impact forces as a result of the accident sequence. The fuselage aft of the rear cabin bulkhead was twisted and deformed due to impact forces. The empennage remained intact with minor damage. Both main wings and associated flaps and ailerons remained attached to the fuselage. Flight control continuity was confirmed throughout the airplane from the pilot controls to the control surfaces, with the exception of the elevator torque tube, which was fractured and observed to have separated near the elevator pitch servo. Both main landing gear remained attached to the airframe, while the nose landing gear was separated. All flight components necessary for flight were accounted for at the accident site.

Left wing

The left wing remained attached to the fuselage at the wing root and secured all attach points. The wing was observed bend and twisted, with leading edge damage and aft crushing through the wing's span. The left flap remained attached to the trailing edge of the left wing at all attach points. The left aileron remained attached to the outboard section of the wing's trailing edge at all attach points, with impact damage observed. No trip tab installed on left aileron. The left fuel tank was observed intact and not breached. The fuel was tight and in place and not compromised.

Right wing

The right wing remained attached to the fuselage at the wing root and secured at all attach points. The wing was observed bent and twisted with leading edge crushing to inboard 2/3 of the wing. The right flap remained attached to the trailing edge of the wing at all attach points. It was observed deflected to the near full position with only minor impact damage. The right aileron remained attached to the trailing edge of the wing at all attach points with no visible damage observed. The airplane did not have a right aileron trim tab installed. The right fuel

tank was observed intact and not breached. The fuel was tight and in place and not compromised.

Elevators

The left elevator remained attached to the trailing edge of the left horizontal stabilizer at all attach points. The outboard 1/2 section was wrinkled and bent upwards about 10 degrees. The left elevator trim tab remained attached to the trailing edge of the respective elevator at all attached points and was observed in a 5-degree pitch down orientation and was not damaged.

The right elevator remained attached to the trailing edge of the right horizontal stabilizer at all attach points. There was no damage to the elevator as observed, and its relative position was neutral.

Horizontal stabilizers

The left horizontal stabilizer remained attached to the left side of the fuselage at all attach points. The outboard 1/2 of the stabilizer was observed bent and wrinkled and bent upwards about 10 degrees.

The right horizontal stabilizer remained attached to the right side of the fuselage at all attach points, with only minor wrinkling on the underside of the stabilizer observed.

Vertical stabilizer

Remained attached to the aft top portion of the fuselage at all attach points with no damage observed.

Rudder

The rudder remained attached to the trailing edge of the vertical stabilizer at all attach points, with damage to the lower portion of the rudder observed. There was no rudder trim tab installed.

Landing gear

Both the left and right main landing gear remained attached to the fuselage at all attach points, and both were observed bent aft under the left wing as a result of the impact sequence.

The nose landing gear was observed bent and twisted, was separated from the forward fuselage/engine mount attach points.

Cockpit/instrument components

Except for the following, no instrument panel readings were observed:

Altimeter.....	3,900 ft
VSI.....	+100 ft
Light switches.....	Nav light "ON" / Strobe light "OFF"

2.0.2 Engine examination notes

According to engine records provided to the NTSB IIC by a family member, the engine was a Superior Air Parts O-360-B1A2, serial number 02126, which according to the pilot was installed on May 15, 2007; this was a "new 0 time engine".

A postaccident examination of the engine revealed that no catastrophic issues with the engine were observed during the initial external examination. Additionally, further examination revealed that when turned by hand the crankshaft rotated unimpeded through 360 degrees, with continuity after through the accessory section of the engine. No anomalies with the engine were noted during the examination that would have precluded normal operation.

2.0.3 Propeller examination notes

Propeller and propeller blades

The propeller was a two-bladed Hartzell propeller

Model HC-C2YK-18F

Blade #1 serial number: J81459

Blade #2 serial number: J80862

The propeller was observed to have remained attached to the crankshaft. Both blades were bent aft about 30 degrees, with chordwise scratches to each blade. Both had remained attached and secured to their respective propeller hubs.