



Aviation Investigation Final Report

Location:	Scio, Oregon	Accident Number:	WPR22FA312
Date & Time:	August 21, 2022, 14:03 Local	Registration:	N184DJ
Aircraft:	JACKSON DENNIS RV-8	Aircraft Damage:	Substantial
Defining Event:	Collision with terr/obj (non-CFIT)	Injuries:	2 Fatal
Flight Conducted Under:	Part 91: General aviation - Personal		

Analysis

Relatives of the pilot said the pilot would often conduct low-altitude flights and perform aerobatic maneuvers over their home. They stated that on the day of the accident, the pilot overflew their home and made a total of three passes. During the third pass, the relatives estimated the airplane was about 100 ft above the ground flying from north to south when it entered a barrel roll and descended out of sight behind trees, where it impacted the ground. The family members stated that they thought the pilot started the maneuver lower than normal and that the maneuver was not flown smoothly. They described hearing the engine running steady and did not hear anything abnormal before the accident. Flight data from an onboard flight instrument and a separate witness video corroborated the relatives' statements. Examination of the wreckage revealed no evidence of any preimpact mechanical malfunctions or failures that would have precluded normal operation.

Toxicology testing revealed that the pilot had used cannabis; its inactive metabolite THC-COOH was detected in his heart blood and lung tissue. No active THC was found in his blood or lung tissue. While the pilot's pattern of cannabis use is unknown, given the lack of psychoactive THC or 11-OH-THC in his blood, it is unlikely that the pilot was under the influence of THC.

Toxicology testing also detected diphenhydramine in the pilot's liver tissue. While diphenhydramine carries a warning about the potential for mental and physical impairment in performing hazardous activities, there was no drug found in his blood. Thus, effects from the pilot's use of diphenhydramine were not a factor in this accident.

The accident is consistent with the pilot electing to conduct an ostentatious flight display at low altitude and his subsequent failure to perform a rolling aerobatic maneuver correctly, which resulted in a loss of control and impact with terrain.

Probable Cause and Findings

The National Transportation Safety Board determines the probable cause(s) of this accident to be:

The pilot’s decision to perform a low-altitude aerobatic maneuver and his improper execution of the maneuver, which resulted in impact with terrain.

Findings

Personnel issues	Decision making/judgment - Pilot
Aircraft	Altitude - Not attained/maintained

Factual Information

History of Flight

Maneuvering-aerobatics	Collision with terr/obj (non-CFIT) (Defining event)
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On August 21, 2022, at 1403 mountain daylight time, an experimental amateur-built Vans RV-8, N184DJ, was substantially damaged when it was involved in an accident near Scio, Oregon. The pilot and passenger were fatally injured. The airplane was operated as a Title 14 Code of Federal Regulations Part 91 personal flight.

Relatives of the pilot told investigators the pilot would often conduct low-altitude flights and perform aerobatic maneuvers over their home, and they were aware he was going to overfly their home on the day of the accident. Flight data recovered from a Dynon SV-D1000 unit onboard the airplane showed the airplane departed Albany Municipal Airport (S12), Albany, Oregon, about 1353, and proceeded easterly towards the relative’s home. The airplane then entered the area of the accident from the west to the east and performed a series of maneuvers near the accident site (Figure 1).



Figure 1. The accident airplane’s flight path.

The relatives of the pilot observed the airplane make three passes over their home before the accident. The accident occurred during the third pass after the airplane flew over about 100 ft above the ground from north to south. The airplane “rolled like a barrel roll” and then descended out of sight behind trees, where they heard it impact the ground.

One family member stated she thought the pilot started the maneuver lower than normal. The second family member said that something did not look right at the start of the maneuver, that the airplane was too low, and that the maneuver was “really snappy looking” and not smooth like he had seen before. He also said the airplane was not wings level as it exited the maneuver. Both family members described hearing the engine running steady and did not hear anything abnormal before the accident.

A witness videoed the final portion of the accident pass. In the video, the airplane can be seen in a nose-up attitude through distant trees, then descending towards the ground at about a 45° nose-low attitude. The airplane engine can be heard running before the sound of impact is heard.

The flight and engine data recovered from the Dynon SV-D1000 unit was consistent with the witness testimony and no engine anomalies were noted in the data. Examination of the wreckage revealed no evidence of any preimpact mechanical malfunctions or failures that would have precluded normal operation.

Pilot Information

Certificate:	Private	Age:	78, Male
Airplane Rating(s):	Single-engine land	Seat Occupied:	Front
Other Aircraft Rating(s):	None	Restraint Used:	5-point
Instrument Rating(s):	None	Second Pilot Present:	No
Instructor Rating(s):	None	Toxicology Performed:	Yes
Medical Certification:	Class 3 With waivers/limitations	Last FAA Medical Exam:	April 24, 2017
Occupational Pilot:	No	Last Flight Review or Equivalent:	
Flight Time:			

Passenger Information

Certificate:		Age:	Female
Airplane Rating(s):		Seat Occupied:	Rear
Other Aircraft Rating(s):		Restraint Used:	5-point
Instrument Rating(s):		Second Pilot Present:	No
Instructor Rating(s):		Toxicology Performed:	
Medical Certification:		Last FAA Medical Exam:	
Occupational Pilot:	No	Last Flight Review or Equivalent:	
Flight Time:			

No pilot logbooks were recovered during the investigation.

Aircraft and Owner/Operator Information

Aircraft Make:	JACKSON DENNIS	Registration:	N184DJ
Model/Series:	RV-8	Aircraft Category:	Airplane
Year of Manufacture:	2004	Amateur Built:	Yes
Airworthiness Certificate:	Experimental (Special)	Serial Number:	80396
Landing Gear Type:	Tailwheel	Seats:	2
Date/Type of Last Inspection:		Certified Max Gross Wt.:	
Time Since Last Inspection:		Engines:	1 Reciprocating
Airframe Total Time:		Engine Manufacturer:	AMA/EXPR
ELT:		Engine Model/Series:	UNKNOWN ENG
Registered Owner:	DELTA J ENTERPRISES LLC	Rated Power:	
Operator:	On file	Operating Certificate(s) Held:	None

No maintenance records were recovered during the investigation.

Meteorological Information and Flight Plan

Conditions at Accident Site:	Visual (VMC)	Condition of Light:	Day
Observation Facility, Elevation:	KSLE,201 ft msl	Distance from Accident Site:	16 Nautical Miles
Observation Time:	13:56 Local	Direction from Accident Site:	328°
Lowest Cloud Condition:	Clear	Visibility	10 miles
Lowest Ceiling:	None	Visibility (RVR):	
Wind Speed/Gusts:	/	Turbulence Type Forecast/Actual:	/
Wind Direction:		Turbulence Severity Forecast/Actual:	/
Altimeter Setting:	29.98 inches Hg	Temperature/Dew Point:	29°C / 14°C
Precipitation and Obscuration:	No Obscuration; No Precipitation		
Departure Point:	Albany, OR (S12)	Type of Flight Plan Filed:	None
Destination:		Type of Clearance:	None
Departure Time:	13:53 Local	Type of Airspace:	Class G

Wreckage and Impact Information

Crew Injuries:	1 Fatal	Aircraft Damage:	Substantial
Passenger Injuries:	1 Fatal	Aircraft Fire:	None
Ground Injuries:		Aircraft Explosion:	None
Total Injuries:	2 Fatal	Latitude, Longitude:	44.674389,-122.79653

The airplane impacted a grass field about .2 miles south of the relative's home. The initial impact signatures were indicative of the airplane impacting in a nose-low and right-wing low attitude. The right flap was separated from the wing and located about 50 ft from the initial impact point. The canopy was separated from the fuselage and was located about 150 ft from the initial impact point. The main wreckage was inverted and located about 250 ft and bearing 200° from the initial impact point. The right wing was mostly separated from the fuselage and was resting under the fuselage.

Both ailerons, elevators, and the rudder were accounted for and remained attached to the airplane. Flight control continuity was verified to all flight control surfaces from the cockpit and continuity was established for all flight controls except the right aileron. The right aileron control tube was fractured near the wing root consistent with impact damage.

The propeller assembly had separated from the engine at the shaft and was located near the main wreckage. Both propeller blades exhibited leading edge gouges, chordwise scratches, and significant S-type bending and curling.

Medical and Pathological Information

The pilot's most recent third-class medical certificate was issued on April 24, 2017, with the limitation that he must have available glasses for near vision. He reported taking no medications or having any medical conditions at the time of that examination. According to the autopsy report from the Oregon State Medical Examiner, Clackamas, Oregon, the pilot's cause of death was multiple blunt force injuries, and the manner of death was accident. No significant natural disease was identified. Toxicology testing detected carboxy-delta-9-tetrahydrocannabinol (THC-COOH) in the pilot's heart blood at 14.9 nanograms per milliliter (ng/mL) and in lung tissue. No active THC was found in his blood or lung tissue. Diphenhydramine was also detected in the pilot's liver tissue. No diphenhydramine was found in his blood.

Administrative Information

Investigator In Charge (IIC):	Baker, Daniel
Additional Participating Persons:	James Holden; FAA; Portland, OR
Original Publish Date:	April 25, 2024
Last Revision Date:	
Investigation Class:	Class 3
Note:	
Investigation Docket:	https://data.ntsb.gov/Docket?ProjectID=105772

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