



Aviation Investigation Final Report

Location:	West Portsmouth, Ohio	Accident Number:	CEN21LA250
Date & Time:	June 4, 2021, 18:45 Local	Registration:	N20YY
Aircraft:	Vans RV9	Aircraft Damage:	Substantial
Defining Event:	Fuel starvation	Injuries:	1 Minor, 1 None
Flight Conducted Under:	Part 91: General aviation - Personal		

Analysis

The pilot reported he'd taken off and was about 10 minutes from the airport when the airplane's engine lost power and began to descend. The pilot misdiagnosed the power loss as an electronic ignition problem and troubleshooted it as such. However, after turning on the electric fuel pump and switching fuel tanks several times, the pilot was unable to restore engine power and elected to perform a forced landing to a field. During the forced landing the airplane nosed over and came to rest inverted. The airplane sustained substantial damage to the rudder. Federal Aviation Administration inspectors reported that during a postaccident examination of the airplane the right fuel tank was empty, and the left fuel tank had about 4 gallons of fuel. The fuel selector had the right fuel tank selected. No other mechanical failures or malfunctions with the airplane were found that would have precluded normal operations. The pilot reported he spoke with the previous owner and was unaware that when switching fuel tanks, it could take about 10 seconds for the new tank to pick up fuel. The pilot reported that he had never run a fuel tank empty and was not familiar with how the engine would respond, and how long it would take for fuel to return to the engine when another fuel tank was selected.

Probable Cause and Findings

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

The pilot's improper use of the airplane's fuel system, which resulted in a total loss of engine power due to fuel starvation.

Findings

Personnel issues	Knowledge of equipment - Pilot
Aircraft	Fuel - Fluid management
Environmental issues	(general) - Contributed to outcome

Factual Information

History of Flight

Initial climb	Fuel starvation (Defining event)
Initial climb	Loss of engine power (total)
Landing-flare/touchdown	Off-field or emergency landing

Pilot Information

Certificate:	Private	Age:	43,Male
Airplane Rating(s):	Single-engine land	Seat Occupied:	Left
Other Aircraft Rating(s):	None	Restraint Used:	3-point
Instrument Rating(s):	None	Second Pilot Present:	
Instructor Rating(s):	None	Toxicology Performed:	
Medical Certification:	Class 3 With waivers/limitations	Last FAA Medical Exam:	November 22, 2016
Occupational Pilot:	No	Last Flight Review or Equivalent:	September 14, 2020
Flight Time:	276.5 hours (Total, all aircraft), 225 hours (Total, this make and model), 276.5 hours (Pilot In Command, all aircraft), 24.6 hours (Last 90 days, all aircraft), 8 hours (Last 30 days, all aircraft), 3 hours (Last 24 hours, all aircraft)		

Aircraft and Owner/Operator Information

Aircraft Make:	Vans	Registration:	N20YY
Model/Series:	RV9 A	Aircraft Category:	Airplane
Year of Manufacture:	2006	Amateur Built:	Yes
Airworthiness Certificate:	Experimental (Special)	Serial Number:	90778
Landing Gear Type:	Tricycle	Seats:	2
Date/Type of Last Inspection:	May 11, 2021 Condition	Certified Max Gross Wt.:	
Time Since Last Inspection:	15 Hrs	Engines:	1 Reciprocating
Airframe Total Time:	971 Hrs as of last inspection	Engine Manufacturer:	Continental Titan
ELT:	Installed, not activated	Engine Model/Series:	X-361-A1A
Registered Owner:	MICHELS DAVID A	Rated Power:	185 Horsepower
Operator:	On file	Operating Certificate(s) Held:	None

Meteorological Information and Flight Plan

Conditions at Accident Site:	Visual (VMC)	Condition of Light:	Day
Observation Facility, Elevation:	KDWU, 546 ft msl	Distance from Accident Site:	19 Nautical Miles
Observation Time:	18:56 Local	Direction from Accident Site:	138°
Lowest Cloud Condition:	Clear	Visibility	10 miles
Lowest Ceiling:	None	Visibility (RVR):	
Wind Speed/Gusts:	4 knots / None	Turbulence Type Forecast/Actual:	/
Wind Direction:	280°	Turbulence Severity Forecast/Actual:	/
Altimeter Setting:	30 inches Hg	Temperature/Dew Point:	28°C / 17°C
Precipitation and Obscuration:	No Obscuration; No Precipitation		
Departure Point:	Portsmouth, OH (KPMH)	Type of Flight Plan Filed:	VFR
Destination:	Flemingsburg, KY (KFGX)	Type of Clearance:	VFR
Departure Time:	18:45 Local	Type of Airspace:	Class G

Wreckage and Impact Information

Crew Injuries:	1 None	Aircraft Damage:	Substantial
Passenger Injuries:	1 Minor	Aircraft Fire:	None
Ground Injuries:		Aircraft Explosion:	None
Total Injuries:	1 Minor, 1 None	Latitude, Longitude:	38.791468,-83.014358(est)

Administrative Information

Investigator In Charge (IIC):	Aguilera, Jason
Additional Participating Persons:	Timothy Pence; FAA FSDO; Cincinnati, OH
Original Publish Date:	October 19, 2021
Last Revision Date:	
Investigation Class:	Class 4
Note:	The NTSB did not travel to the scene of this accident.
Investigation Docket:	https://data.nts.gov/Docket?ProjectID=103214

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The NTSB does not assign fault or blame for an accident or incident; rather, as specified by NTSB regulation, “accident/incident investigations are fact-finding proceedings with no formal issues and no adverse parties ... and are not conducted for the purpose of determining the rights or liabilities of any person” (Title 49 *Code of Federal Regulations* section 831.4). Assignment of fault or legal liability is not relevant to the NTSB’s statutory mission to improve transportation safety by investigating accidents and incidents and issuing safety recommendations. In addition, statutory language prohibits the admission into evidence or use of any part of an NTSB report related to an accident in a civil action for damages resulting from a matter mentioned in the report (Title 49 *United States Code* section 1154(b)). A factual report that may be admissible under 49 *United States Code* section 1154(b) is available [here](#).