



# Aviation Investigation Final Report

<b>Location:</b>	Delaware, Ohio	<b>Accident Number:</b>	CEN18LA351
<b>Date &amp; Time:</b>	August 26, 2018, 16:34 Local	<b>Registration:</b>	N4842K
<b>Aircraft:</b>	Cessna P210	<b>Aircraft Damage:</b>	Substantial
<b>Defining Event:</b>	Fuel starvation	<b>Injuries:</b>	2 None
<b>Flight Conducted Under:</b>	Part 91: General aviation - Personal		

## Analysis

The pilot departed the airport to rejoin and fly in formation with a vintage airplane. After the airplane rejoined the formation, the engine lost total power; the pilot made a forced landing, during which the airplane nosed over and sustained damage to the vertical stabilizer. Postaccident examination of the airframe and engine revealed no evidence of mechanical malfunctions or failures that would have precluded normal flight operations. Downloaded engine data revealed a rapid drop of fuel flow and decrease in engine rpm that were consistent with fuel starvation.

The pilot attributed the power loss to "running the right tank out of fuel" after not switching the fuel selector from right to left fuel tank, as he had initially planned, during the flight. The pilot stated the high engine power setting he used to rejoin with the vintage airplane was a fuel planning consideration for which he had not accounted and that his preflight and in-flight fuel planning routines were rushed because of his desire to rejoin the formation.

## Probable Cause and Findings

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

The pilot's inadequate fuel management, which resulted in a total loss of engine power due to fuel starvation. Contributing to the accident was the pilot's distraction of the formation flight.

## Findings

Personnel issues	Fuel planning - Pilot
Personnel issues	Monitoring equip/instruments - Pilot

# Factual Information

## History of Flight

Enroute-cruise	Fuel starvation (Defining event)
Landing	Nose over/nose down

On August 26, 2018, about 1634 eastern daylight time, a Cessna P210N airplane, N4842K, impacted terrain during a forced landing near Delaware, Ohio. The pilot and passenger were not injured, and the airplane was substantially damaged. The airplane was registered to and operated by Juliet Echo Aviation LLC under the provisions of Title 14 *Code of Federal Regulations* Part 91 as a personal flight. Day visual meteorological conditions prevailed for the flight, which departed about 1556 from Harry Clever Airport (PHD), Philadelphia, Ohio, with a destination of Grimes Field Airport (I74), Urbana, Ohio.

After departing PHD, the pilot climbed to 2,500 ft msl and about 25 minutes later, rejoined to a formation position with a vintage B25 airplane to obtain airborne photos. After being rejoined with the B25 for several minutes, the pilot heard the fuel-injected engine make a "burping" noise, followed by a total loss of power. The pilot executed a forced landing into a cornfield, during which the airplane nosed over, damaging the vertical stabilizer.

The pilot stated his preflight and in-flight fuel planning routines were rushed, based on his desire to takeoff and rejoin with the B25 airplane. He recalled takeoff fuel as about 34 gallons, with about 18 gallons in the left tank and about 16 gallons in the right tank, and he departed with the fuel selector set on the right tank. Based on his desire to rejoin expeditiously with the B25, the pilot utilized a higher cruise power setting than normal, with a corresponding higher fuel flow.

About 20 minutes into the flight, the pilot's timer set on the GPS to switch fuel tanks alarmed, but he thought it was "too early to switch tanks" and he did not switch tanks or check fuel tank quantities at the time. The pilot thought the power loss was due to "running the right tank out of fuel" and attributed his error to not switching the fuel selector from right to left fuel tank when the GPS timer alarmed, as well as the higher fuel flow during cruise than he had planned.

Downloaded engine data revealed a fuel flow near 27 gallons per hour for most of the flight. Total fuel consumed on the accident flight was estimated to be about 15 gallons. Two minutes prior to the forced landing, downloaded engine data showed a rapid drop of fuel flow to nearly zero gallons per hour and a rapid decrease in engine rpm. Examination of the airframe and engine revealed no evidence of mechanical malfunctions or failures that would have precluded normal flight operations.

## Pilot Information

<b>Certificate:</b>	Airline transport	<b>Age:</b>	47,Male
<b>Airplane Rating(s):</b>	Single-engine land; Multi-engine land	<b>Seat Occupied:</b>	Left
<b>Other Aircraft Rating(s):</b>	None	<b>Restraint Used:</b>	3-point
<b>Instrument Rating(s):</b>	Airplane	<b>Second Pilot Present:</b>	No
<b>Instructor Rating(s):</b>	Airplane multi-engine; Airplane single-engine	<b>Toxicology Performed:</b>	No
<b>Medical Certification:</b>	Class 2 Without waivers/limitations	<b>Last FAA Medical Exam:</b>	November 20, 2017
<b>Occupational Pilot:</b>	No	<b>Last Flight Review or Equivalent:</b>	September 20, 2017
<b>Flight Time:</b>	4626 hours (Total, all aircraft), 300 hours (Total, this make and model), 4540 hours (Pilot In Command, all aircraft), 58 hours (Last 90 days, all aircraft), 39 hours (Last 30 days, all aircraft), 3 hours (Last 24 hours, all aircraft)		

## Passenger Information

<b>Certificate:</b>		<b>Age:</b>	Male
<b>Airplane Rating(s):</b>		<b>Seat Occupied:</b>	Right
<b>Other Aircraft Rating(s):</b>		<b>Restraint Used:</b>	3-point
<b>Instrument Rating(s):</b>		<b>Second Pilot Present:</b>	No
<b>Instructor Rating(s):</b>		<b>Toxicology Performed:</b>	No
<b>Medical Certification:</b>		<b>Last FAA Medical Exam:</b>	
<b>Occupational Pilot:</b>	No	<b>Last Flight Review or Equivalent:</b>	
<b>Flight Time:</b>			

## Aircraft and Owner/Operator Information

<b>Aircraft Make:</b>	Cessna	<b>Registration:</b>	N4842K
<b>Model/Series:</b>	P210 N	<b>Aircraft Category:</b>	Airplane
<b>Year of Manufacture:</b>	1979	<b>Amateur Built:</b>	
<b>Airworthiness Certificate:</b>	Normal	<b>Serial Number:</b>	P21000343
<b>Landing Gear Type:</b>	Retractable -	<b>Seats:</b>	6
<b>Date/Type of Last Inspection:</b>	October 25, 2017 Annual	<b>Certified Max Gross Wt.:</b>	4000 lbs
<b>Time Since Last Inspection:</b>		<b>Engines:</b>	1 Reciprocating
<b>Airframe Total Time:</b>	3683 Hrs as of last inspection	<b>Engine Manufacturer:</b>	Continental
<b>ELT:</b>	Installed, activated, did not aid in locating accident	<b>Engine Model/Series:</b>	IO520
<b>Registered Owner:</b>		<b>Rated Power:</b>	285 Horsepower
<b>Operator:</b>		<b>Operating Certificate(s) Held:</b>	None

## Meteorological Information and Flight Plan

<b>Conditions at Accident Site:</b>	Visual (VMC)	<b>Condition of Light:</b>	Day
<b>Observation Facility, Elevation:</b>	KDLZ, 945 ft msl	<b>Distance from Accident Site:</b>	5 Nautical Miles
<b>Observation Time:</b>	17:16 Local	<b>Direction from Accident Site:</b>	257°
<b>Lowest Cloud Condition:</b>	Scattered / 3400 ft AGL	<b>Visibility</b>	10 miles
<b>Lowest Ceiling:</b>		<b>Visibility (RVR):</b>	
<b>Wind Speed/Gusts:</b>	/	<b>Turbulence Type Forecast/Actual:</b>	None / None
<b>Wind Direction:</b>		<b>Turbulence Severity Forecast/Actual:</b>	N/A / N/A
<b>Altimeter Setting:</b>	30.1 inches Hg	<b>Temperature/Dew Point:</b>	31°C / 24°C
<b>Precipitation and Obscuration:</b>	No Obscuration; No Precipitation		
<b>Departure Point:</b>	New Philadelphia, OH (PHD )	<b>Type of Flight Plan Filed:</b>	None
<b>Destination:</b>	Urbana, OH (I74 )	<b>Type of Clearance:</b>	None
<b>Departure Time:</b>	15:56 Local	<b>Type of Airspace:</b>	Class G

## Wreckage and Impact Information

<b>Crew Injuries:</b>	1 None	<b>Aircraft Damage:</b>	Substantial
<b>Passenger Injuries:</b>	1 None	<b>Aircraft Fire:</b>	None
<b>Ground Injuries:</b>	N/A	<b>Aircraft Explosion:</b>	None
<b>Total Injuries:</b>	2 None	<b>Latitude, Longitude:</b>	40.299999,-83(est)

## Administrative Information

<b>Investigator In Charge (IIC):</b>	Folkerts, Michael
<b>Additional Participating Persons:</b>	John Welsh; Flight Standards District Office; Columbus, OH
<b>Original Publish Date:</b>	June 3, 2020
<b>Note:</b>	The NTSB did not travel to the scene of this accident.
<b>Investigation Docket:</b>	<a href="https://data.nts.gov/Docket?ProjectID=98157">https://data.nts.gov/Docket?ProjectID=98157</a>

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The Independent Safety Board Act, as codified at 49 U.S.C. Section 1154(b), precludes the admission into evidence or use of any part of an NTSB report related to an incident or accident in a civil action for damages resulting from a matter mentioned in the report. A factual report that may be admissible under 49 U.S.C. § 1154(b) is available [here](#).