



Aviation Investigation Final Report

Location:	Mount Vernon, Ohio	Accident Number:	WPR18LA207
Date & Time:	July 28, 2018, 10:45 Local	Registration:	N785SP
Aircraft:	Cessna 172	Aircraft Damage:	Destroyed
Defining Event:	Fire/smoke (non-impact)	Injuries:	1 Minor
Flight Conducted Under:	Part 91: General aviation - Personal		

Analysis

The student pilot reported that, several minutes after takeoff for the personal flight, he maneuvered the airplane to enter the traffic pattern to practice touch-and-go landings. Shortly after, he noticed a fire near the rudder pedals. He expedited his approach, and the fire continued to grow while he landed the airplane. After landing, he safely egressed from the airplane; a few seconds later, the cockpit area was engulfed in flames. The airplane was destroyed.

Postaccident examination of the airplane revealed evidence of a fuel-fed fire that had emanated from the rear, lower center portion of the engine. Extensive thermal damage was in the area where the mechanical fuel pump is mounted to the oil cooler. The oil cooler's bottom hose connection was separated from the oil cooler, and the fuel pump's bottom portion was missing. Due to the fire damage, the exact initiation point and source of the fire could not be determined.

There were no maintenance write-ups indicating a fuel leak or odors in the previous 20 flight hours.

Probable Cause and Findings

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

An in-flight fuel-fed fire from an unknown source for reasons that could not be determined due to the extensive fire damage to the airplane.

Findings

Not determined	(general) - Unknown/Not determined
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Factual Information

History of Flight

Approach	Fire/smoke (non-impact) (Defining event)
Landing	Fire/smoke (non-impact)
After landing	Fire/smoke (non-impact)

On July 28, 2018, about 1045 eastern daylight time, a Cessna 172S airplane, N785SP, was destroyed following an inflight fire in the traffic pattern at Knox County Airport (4I3), Mount Vernon, Ohio. The student pilot sustained minor injuries. The airplane was registered to a private individual and operated by the pilot as a Title 14 *Code of Federal Regulations* Part 91 personal flight. Visual meteorological conditions prevailed, and no flight plan was filed for the cross-country flight that departed Newark-Heath Airport (VTA), Newark, Ohio, about 1025. The flight was destined for Zanesville Municipal Airport (ZZV), Zanesville, Ohio.

According to the student, several minutes after takeoff, he maneuvered the airplane to enter the traffic pattern at 4I3, to accomplish touch-and-go landings. Initially, the student noticed his left foot was getting hot. Shortly thereafter, he noticed a fire near the rudder pedals. He pulled back the throttle and expedited his approach for landing. Subsequently, the fire continued to enlarge while he landed the airplane. After landing, he discharged the fire extinguisher and safely egressed from the airplane; a few seconds later the cockpit area was engulfed in flames.

Postaccident examination of the airplane by Federal Aviation Administration (FAA) airworthiness inspectors revealed that there was evidence of a fuel-fed fire, which emanated from the rear, lower center portion of the engine. Substantial thermal damage was observed in the area where the mechanical fuel pump is mounted to the oil cooler. The bottom hose connection was observed to be separated from the oil cooler. Furthermore, the bottom portion of the fuel pump was observed missing.

The fire started and eventually enlarged from an unknown source that could not be determined from the available evidence.

According to the FAA inspector, the airplane had complied with all appropriate Airworthiness Directives (ADs). Furthermore, the airplane had no maintenance write ups for fuel leaks or odors in the previous 20 flight hours.

Student pilot Information

Certificate:	Student	Age:	53,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:	No
Instructor Rating(s):	None	Toxicology Performed:	No
Medical Certification:	Class 3 Without waivers/limitations	Last FAA Medical Exam:	October 3, 2017
Occupational Pilot:	No	Last Flight Review or Equivalent:	
Flight Time:	(Estimated) 4000 hours (Total, all aircraft), 100 hours (Total, this make and model), 12 hours (Last 90 days, all aircraft), 6 hours (Last 30 days, all aircraft), 2 hours (Last 24 hours, all aircraft)		

Aircraft and Owner/Operator Information

Aircraft Make:	Cessna	Registration:	N785SP
Model/Series:	172 S	Aircraft Category:	Airplane
Year of Manufacture:	2001	Amateur Built:	
Airworthiness Certificate:	Normal	Serial Number:	172S8712
Landing Gear Type:	Tricycle	Seats:	
Date/Type of Last Inspection:	100 hour	Certified Max Gross Wt.:	2299 lbs
Time Since Last Inspection:		Engines:	1 Reciprocating
Airframe Total Time:		Engine Manufacturer:	Lycoming
ELT:	Installed, not activated	Engine Model/Series:	IO360 SER
Registered Owner:		Rated Power:	180 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:	4I3,1191 ft msl	Distance from Accident Site:	0 Nautical Miles
Observation Time:	10:56 Local	Direction from Accident Site:	0°
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:	30.15 inches Hg	Temperature/Dew Point:	22°C / 15°C
Precipitation and Obscuration:	No Obscuration; No Precipitation		
Departure Point:	Newark, OH (VTA)	Type of Flight Plan Filed:	None
Destination:	Zanesville, OH (ZZV)	Type of Clearance:	Unknown
Departure Time:	10:25 Local	Type of Airspace:	

Airport Information

Airport:	Knox County 4I3	Runway Surface Type:	Asphalt
Airport Elevation:	1191 ft msl	Runway Surface Condition:	Dry
Runway Used:	28	IFR Approach:	None
Runway Length/Width:	5498 ft / 100 ft	VFR Approach/Landing:	Forced landing;Touch and go;Traffic pattern

Wreckage and Impact Information

Crew Injuries:	1 Minor	Aircraft Damage:	Destroyed
Passenger Injuries:		Aircraft Fire:	In-flight
Ground Injuries:	N/A	Aircraft Explosion:	None
Total Injuries:	1 Minor	Latitude, Longitude:	40.328887,-82.526107(est)

Administrative Information

Investigator In Charge (IIC):	Nixon, Albert
Additional Participating Persons:	Stan Barnes; Federal Aviation Administration; Columbus, OH Dennis Garcia; Federal Aviation Administration; Columbus, OH
Original Publish Date:	June 8, 2020
Note:	The NTSB did not travel to the scene of this accident.
Investigation Docket:	https://data.nts.gov/Docket?ProjectID=97923

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