Aviation Investigation Final Report

Location:	Clyde, Ohio	**Accident Number:**	ERA23LA224
Date & Time:	May 6, 2023, 13:07 Local	**Registration:**	N678FL
Aircraft:	Piper PA-28-140	**Aircraft Damage:**	Substantial
Defining Event:	Fuel starvation	**Injuries:**	1 Serious
Flight Conducted Under:	Part 91: General aviation - Personal		

Analysis

The pilot was performing a touch-and-go landing at an airport near his home base. During the initial climb after an uneventful landing, the engine lost all power. He was unable to return to the airport, so he performed a forced landing in a nearby farm field. The pilot sustained serious injuries and the airframe was substantially damaged.

The postaccident examination of the airplane revealed that the right wing was severed during the forced landing and the right wing fuel tank was compromised; however, 7 gallons of fuel were recovered from it. The left wing was intact and undamaged. About 1 quart of fuel was recovered from the left tank, and the cockpit fuel selector handle was found in the left tank position. Subsequent examination of the engine and fuel system revealed no evidence of a preexisting mechanical malfunction or failure. Fuel records indicated that the airplane was operated about 4 hours since the previous refueling. The pilot would later state that he did not know why the engine lost power but that it may have been the result of a failure to switch fuel tanks. Based on this information, it is likely that the pilots inadequate fuel management resulted in fuel starvation and the subsequent total loss of engine power.

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 fuel starvation and a forced landing.

Findings

Aircraft	Fuel - Fluid management
Personnel issues	Use of equip/system - Pilot

Factual Information

History of Flight

Initial climb	Fuel starvation (Defining event)
Emergency descent	Off-field or emergency landing

On May 6, 2023, about 1307 eastern daylight time, a Piper PA-28-140, N678FL, was substantially damaged when it was involved in an accident near Clyde, Ohio. The private pilot was seriously injured. The airplane was operated as a Title 14 *Code of Federal Regulations* Part 91 personal flight.

The pilot reported that he departed from Fremont Airport (14G), Fremont, Ohio at 1150. He performed a touch-and-go landing at Fostoria Metro Airport (FZI), Fostoria, Ohio, and was planning a touch-and-go landing at Sandusky County Regional Airport (S24) before returning to 14G, his home airport. After an uneventful touch-and-go landing at S24, during the initial climb, the engine lost all power. He performed a forced landing into a cornfield about ½ mile northeast of S24. The pilot was met by first responders and was taken to a nearby hospital for treatment of his injuries. The pilot later reported that he was unsure why the engine stopped, but stated, "…could be a failure to switch tanks."

Inspectors with the Federal Aviation Administration (FAA) responded to the accident site and examined the wreckage. The fuselage came to rest upright, and there was no fire. The right wing separated from the fuselage during the impact sequence and was found inverted and adjacent to the main wreckage, with the right main landing gear still attached. The fuselage was buckled. The engine remained attached to the fuselage, and the propeller remained attached to the engine. The left wing was undamaged.

Although the right wing fuel tank was ruptured from impact, about 7 gallons of fuel were recovered from that tank. The left wing fuel tank was intact and undamaged. The left tank was drained at the accident site by the inspectors and about 1 quart of fuel was recovered. The cockpit fuel tank selector was in the left tank position.

The wreckage was recovered to a hangar where an additional examination of the engine and fuel system was performed. The engine contained about 4 quarts of clean oil. There was no visible damage to the engine case. Internal engine continuity was confirmed and valve action was correct.

The fuel gascolator was removed and examined. It was dry and contained some small, black particulates. The engine-driven fuel pump was actuated by hand; a few drops of fuel were expelled. The interior of the pump was normal in appearance. The carburetor air box was unobstructed. The carburetor was disassembled. The bowl was free of contaminants and contained about 1 tablespoon of fuel. The brass floats were uncompromised. The electric fuel

boost pump was energized with aircraft battery power; it pumped normally. The fuel tank selector valve was disassembled and operated normally.

The FAA inspectors reported that the airplane was last fueled with 18.8 gallons on March 30, 2023. According to aircraft and pilot records, the airplane was operated about 3.97 hours since the last refueling.

Pilot Information

Certificate:	Private	**Age:**	69,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:**	
Medical Certification:	Class 3 With waivers/limitations	**Last FAA Medical Exam:**	February 23, 2022
Occupational Pilot:	No	**Last Flight Review or Equivalent:**	February 11, 2023
Flight Time:	320 hours (Total, all aircraft), 167 hours (Total, this make and model), 8 hours (Last 90 days, all aircraft), 6 hours (Last 30 days, all aircraft), 1 hours (Last 24 hours, all aircraft)		

Aircraft and Owner/Operator Information

Aircraft Make:	Piper	**Registration:**	N678FL
Model/Series:	PA-28-140	**Aircraft Category:**	Airplane
Year of Manufacture:	1971	**Amateur Built:**	
Airworthiness Certificate:	Normal	**Serial Number:**	28-7125608
Landing Gear Type:	Tricycle	**Seats:**	4
Date/Type of Last Inspection:	April 2, 2023 Annual	**Certified Max Gross Wt.:**	2550 lbs
Time Since Last Inspection:	4 Hrs	**Engines:**	1 Reciprocating
Airframe Total Time:	2617 Hrs at time of accident	**Engine Manufacturer:**	Lycoming
ELT:	C91A installed	**Engine Model/Series:**	O-320-E3D
Registered Owner:	On file	**Rated Power:**	150 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:	KPCW,590 ft msl	**Distance from Accident Site:**	16 Nautical Miles
Observation Time:	12:55 Local	**Direction from Accident Site:**	49°
Lowest Cloud Condition:	Clear	**Visibility**	10 miles
Lowest Ceiling:	None	**Visibility (RVR):**	
Wind Speed/Gusts:	10 knots /	**Turbulence Type Forecast/Actual:**	None / None
Wind Direction:	50°	**Turbulence Severity Forecast/Actual:**	N/A / N/A
Altimeter Setting:	30.21 inches Hg	**Temperature/Dew Point:**	17°C / 11°C
Precipitation and Obscuration:	No Obscuration; No Precipitation		
Departure Point:	Fremont, OH (14G)	**Type of Flight Plan Filed:**	None
Destination:	Fremont, OH (14G)	**Type of Clearance:**	None
Departure Time:	11:50 Local	**Type of Airspace:**	Class G

Airport Information

Airport:	Sandusky County Regional S24	**Runway Surface Type:**	Asphalt
Airport Elevation:	664 ft msl	**Runway Surface Condition:**	Dry
Runway Used:	6	**IFR Approach:**	None
Runway Length/Width:	5500 ft / 100 ft	**VFR Approach/Landing:**	Forced landing

Wreckage and Impact Information

Crew Injuries:	1 Serious	**Aircraft Damage:**	Substantial
Passenger Injuries:		**Aircraft Fire:**	None
Ground Injuries:		**Aircraft Explosion:**	None
Total Injuries:	1 Serious	**Latitude, Longitude:**	41.33854,-83.14562(est)

Administrative Information

Investigator In Charge (IIC):	Hicks, Ralph
Additional Participating Persons:	John Gombar; FAA/FSDO; Cleveland, OH
Original Publish Date:	June 5, 2024
Last Revision Date:	
Investigation Class:	Class 3
Note:	The NTSB did not travel to the scene of this accident.
Investigation Docket:	https://data.ntsb.gov/Docket?ProjectID=130452