Aviation Investigation Final Report

Location:	Bryan, Texas	**Accident Number:**	CEN20LA370
Date & Time:	August 30, 2020, 13:45 Local	**Registration:**	N7469P
Aircraft:	Piper PA24	**Aircraft Damage:**	Substantial
Defining Event:	Fuel exhaustion	**Injuries:**	3 Fatal, 1 Serious
Flight Conducted Under:	Part 91: General aviation - Personal		

Analysis

The pilot was taking three passengers for a local sightseeing flight. A security video at the airport showed the airplane took off from runway 15. There were no video recordings of or witnesses to the accident. The airplane wreckage was located on a flat grass field off of the departure end of runway 15 on airport property and sustained substantial damage to the fuselage, both wings, and the empennage.

An onsite examination of the airframe found the fuel tank selector handle in the right main position. The right main fuel cell was not damaged and did not contain fuel; however, fuel was likely available in the other three fuel tanks. Rotational signatures on the propeller were consistent with it not being driven at the time of impact. A postaccident examination of the engine revealed no preimpact mechanical malfunctions or failures that would have precluded normal operation.

Toxicology testing showed that the pilot had used the allergy medication cetirizine. Cetirizine may sometimes cause drowsiness, but whether cetirizine effects contributed to the accident could not be determined.

Based upon the available evidence, the lack of damage to the propeller is consistent with a loss of engine power and it is likely that the engine lost power shortly after takeoff. The reason for the loss of engine power was likely due to fuel starvation.

Probable Cause and Findings

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

A total loss of engine power on takeoff due to fuel starvation.

Findings

Aircraft	Fuel - Fluid level
Personnel issues	Use of available resources - Pilot

Factual Information

History of Flight

Takeoff	Fuel exhaustion (Defining event)
Takeoff	Loss of engine power (total)

On August 30, 2020, about 1345 central daylight time, a Piper PA-24-250 airplane, N7469P, sustained substantial damage when it was involved in an accident near Bryan, Texas. The pilot and two passengers were fatally injured, and one passenger sustained serious injuries. The airplane was operated as a Title 14 *Code of Federal Regulations* Part 91 personal flight.

According to a family member, the pilot had purchased the airplane about 2 weeks before the accident and the purpose of the flight was for the pilot to take his family members sightseeing in the local area.

Security video footage at Coulter Field Airport (CFD), Bryan, Texas, showed that the airplane took off from runway 15; the video did not show the accident. The airplane wreckage was located crashed on a flat grass field off of the departure end of runway 15 on airport property.

The surviving passenger was unable to recall any events from the accident.

Pilot Information

Certificate:	Private	**Age:**	53,Male
Airplane Rating(s):	Single-engine land	**Seat Occupied:**	Left
Other Aircraft Rating(s):	None	**Restraint Used:**	Lap only
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:**	February 7, 2020
Occupational Pilot:	No	**Last Flight Review or Equivalent:**	May 14, 2020
Flight Time:	(Estimated) 226.4 hours (Total, all aircraft), 130.9 hours (Pilot In Command, all aircraft)		

Aircraft and Owner/Operator Information

Aircraft Make:	Piper	**Registration:**	N7469P
Model/Series:	PA24 250	**Aircraft Category:**	Airplane
Year of Manufacture:	1961	**Amateur Built:**	
Airworthiness Certificate:	Normal	**Serial Number:**	24-2660
Landing Gear Type:	Retractable - Tricycle	**Seats:**	4
Date/Type of Last Inspection:	August 11, 2020 Annual	**Certified Max Gross Wt.:**	2900 lbs
Time Since Last Inspection:	6.74 Hrs	**Engines:**	1 Reciprocating
Airframe Total Time:	3325.52 Hrs at time of accident	**Engine Manufacturer:**	Lycoming Engines
ELT:	C91 installed, activated, did not aid in locating accident	**Engine Model/Series:**	O-540-A1D5
Registered Owner:	On file	**Rated Power:**	250 Horsepower
Operator:	On file	**Operating Certificate(s) Held:**	None
Operator Does Business As:	On file	**Operator Designator Code:**	None

Meteorological Information and Flight Plan

Conditions at Accident Site:	Visual (VMC)	**Condition of Light:**	Day
Observation Facility, Elevation:	KCLL,328 ft msl	**Distance from Accident Site:**	8 Nautical Miles
Observation Time:	13:53 Local	**Direction from Accident Site:**	193°
Lowest Cloud Condition:	Few / 5000 ft AGL	**Visibility**	10 miles
Lowest Ceiling:		**Visibility (RVR):**	
Wind Speed/Gusts:	5 knots / 21 knots	**Turbulence Type Forecast/Actual:**	None / None
Wind Direction:	140°	**Turbulence Severity Forecast/Actual:**	N/A / N/A
Altimeter Setting:	29.78 inches Hg	**Temperature/Dew Point:**	35°C / 22°C
Precipitation and Obscuration:	No Obscuration; No Precipitation		
Departure Point:	Bryan, TX (CFD)	**Type of Flight Plan Filed:**	None
Destination:	Bryan, TX (CFD)	**Type of Clearance:**	None
Departure Time:	14:30 Local	**Type of Airspace:**	Class G

The calculated density altitude for the accident site was 3,205 ft. above mean sea level.

Airport Information

Airport:	Coulter Field CFD	**Runway Surface Type:**	Asphalt
Airport Elevation:	366 ft msl	**Runway Surface Condition:**	Dry
Runway Used:	15	**IFR Approach:**	None
Runway Length/Width:	4000 ft / 75 ft	**VFR Approach/Landing:**	None

Wreckage and Impact Information

Crew Injuries:	1 Fatal	**Aircraft Damage:**	Substantial
Passenger Injuries:	2 Fatal, 1 Serious	**Aircraft Fire:**	None
Ground Injuries:		**Aircraft Explosion:**	None
Total Injuries:	3 Fatal, 1 Serious	**Latitude, Longitude:**	30.71567,-96.331323(est)

An onsite examination of the airframe confirmed flight control continuity. The fuel tank selector handle was found in the right main position and was able to smoothly rotate through all the other positions with the detents plainly noted in each position. The right main fuel cell was visible from the wing root. The inboard forward portion of the right main fuel cell was observed with no tears or damage noted. Manual manipulation of the fuel cell did not reveal the presence of any usable fuel in what appeared to be the lowest portion of the fuel cell.

A postaccident examination of the engine revealed no preimpact mechanical malfunctions or failures that would have precluded normal operation. The three bladed constant speed metal propeller remained attached at the crankshaft flange. The propeller blades remained attached to the propeller hub. Rotational signatures on the propeller were consistent with it not being driven at the time of impact.

The pilot's daughter posted three photographs of the airplane on social media before the flight. One photograph, taken by the daughter sitting in the front right seat, showed the right side of the instrument panel and included the fuel gauges. Based on the image, the following estimates were established regarding the airplane's fuel status right before the accident: Left inboard fuel tank (main): About ¼ full. Left outboard fuel tank (auxiliary): Between ½ to ¾ full. Right inboard fuel tank (main): Between empty to ¼ full. Right outboard fuel tank (auxiliary): About ¾ full.

Medical and Pathological Information

The Travis County (Texas) Medical Examiner's Office, Austin, Texas, performed the pilot's autopsy. According to the autopsy report, the cause of death was blunt force injuries, and the manner of death was an accident. Toxicology testing performed by the Travis County Medical Examiner's office was negative for tested-for substances, and a vitreous chemistry was unremarkable.

The FAA Forensic Sciences Laboratory, Oklahoma City, Oklahoma, detected cetirizine in urine and at 216 nanograms per milliliter (ng/mL) in heart blood. Oxymetazoline was detected in urine but not heart blood.

Cetirizine, sometimes marketed as Zyrtec, is an antihistamine medication that is available over the counter and is commonly used to treat allergy symptoms. The intended medicinal effects of cetirizine generally occur at blood cetirizine levels ranging from about 190 ng/mL to 1450 ng/mL. Cetirizine typically carries a warning that users may experience drowsiness and should be careful when driving a motor vehicle or operating machinery. Data on psychomotor impairment from cetirizine is mixed, with some studies, but not others finding mildly impairing effects. The FAA states that pilots should not fly within 48 hours of using cetirizine and should not use it more than 1-2 times per week.

Oxymetazoline, sometimes marketed as Afrin, is a medication commonly used as a nasal decongestant spray. It is available over the counter and generally is not considered impairing.

Additional Information

The Piper PA-24-250 Owner's Handbook discusses preflight inspection areas for the airplane. This document discusses the fuel tanks and states for the pilot to ensure that, "the fuel tanks are full or are at a safe level of proper fuel."

The Federal Aviation Administration (FAA) Pilot's Handbook of Aeronautical Knowledge FAA-H-8083-25B discusses fuel quantity gauges and states in part:

The fuel quantity gauges indicate the amount of fuel measured by a sensing unit in each fuel tank and is displayed in gallons or pounds. Aircraft certification rules require accuracy in

fuel gauges only when they read "empty." Any reading other than "empty" should be verified. Do not depend solely on the accuracy of the fuel quantity gauges. Always visually check the fuel level in each tank during the preflight inspection, and then compare it with the corresponding fuel quantity indication.

Administrative Information

Investigator In Charge (IIC):	Hodges, Michael
Additional Participating Persons:	Stephen Ragin; FAA Houston FSDO; Houston, TX Jon Hirsch; Piper Aircraft; Vero Beach, FL Ryan Enders; Lycoming Engines; Williamsport, PA Kevin Stahl; McCauley Propeller Systems; Wichita, KS
Original Publish Date:	July 12, 2022
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=101884