Aviation Investigation Final Report

Location:	Wadesboro, North Carolina	**Accident Number:**	ERA21FA333
Date & Time:	August 20, 2021, 10:13 Local	**Registration:**	N8262P
Aircraft:	Piper PA24	**Aircraft Damage:**	Destroyed
Defining Event:	Loss of engine power (partial)	**Injuries:**	2 Fatal
Flight Conducted Under:	Part 91: General aviation - Personal		

Analysis

According to the previous owner of the airplane, he sold it to the pilot about 2 weeks before the accident. The pilot, who held and mechanic certificate and an inspection authorization, planned to complete repairs, perform an annual inspection, and fly the airplane to his home airport. The repairs included replacing hoses, rebuilding a jammed fuel selector valve, repairing a corroded fuel line, and removing and checking a magneto. On the day of the accident, the pilot flew the airplane uneventfully for about 30 minutes, from the location where the airplane had been based to an airport along the route home, to purchase fuel. Witnesses reported that, during startup, the engine sputtered and backfired and that, shortly after takeoff, the engine sputtered and backfired again. The airplane then turned left back toward the airport and descended nose down into wooded terrain, where a postcrash fire ensued.

The wreckage came to rest in a compact area, about 0.5 miles from the runway departure end, with no debris path observed, consistent with an aerodynamic stall and relatively low-energy impact. One propeller blade remained attached to the propeller hub, and the other blade had separated and was located underneath the engine. Both blades exhibited tip curling and leading-edge damage. Examination of the engine revealed no evidence of any preimpact mechanical malfunctions or failures. Fire damage precluded testing of the carburetor and magnetos. Testing of the airport fuel supply revealed no anomalies, and no issues were reported with other airplanes that received airport fuel that day. The engine sputtering and backfiring reported by the witnesses, as well as the signatures observed on the propeller blade, was consistent with a partial loss of engine power. The reason that the engine lost partial power could not be determined based on the available evidence.

Toxicological testing of the pilot identified ethanol in his muscle and brain specimens; however, the difference in the levels of ethanol and the presence of two other alcohols (both

primarily produced postmortem) indicated that the ethanol was most likely from postmortem production rather than ingestion. Meclizine, which is often used to treat motion sickness, was found in the pilot's liver specimens. Although meclizine can cause drowsiness, it likely did not play a role in this accident given that the airplane was observed maneuvering during the final moments of the flight.

Probable Cause and Findings

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

A partial loss of engine power during takeoff for reasons that could not be determined. Contributing was the pilot's loss of airplane control, resulting in an aerodynamic stall and impact with trees and terrain.

Findings

Not determined	(general) - Unknown/Not determined
Aircraft	Angle of attack - Capability exceeded
Personnel issues	Aircraft control - Pilot

Factual Information

History of Flight

Initial climb	Loss of engine power (partial) (Defining event)
Emergency descent	Aerodynamic stall/spin
Uncontrolled descent	Collision with terr/obj (non-CFIT)

On August 20, 2021, about 1013 eastern daylight time, a Piper PA-24-250, N8262P, was destroyed when it was involved in an accident near Wadesboro, North Carolina. The pilot and passenger were fatally injured. The airplane was operated as a Title 14 Code of Federal Regulations Part 91 personal flight.

According to the previous owner of the airplane, he sold the airplane to the accident pilot on August 4, 2021. The pilot drove from his home in Florida to Darr Field Airport (NC03), High Point, North Carolina, where the airplane was based at the time. The pilot, who also held a mechanic certificate with airframe and powerplant ratings, as well as an inspection authorization, planned to complete repairs, perform an annual inspection, and fly the airplane to LaBelle Municipal Airport (X14), LaBelle, Florida. The repairs included replacing hoses, rebuilding a jammed fuel selector valve, repairing a corroded fuel line, and removing and checking one magneto. On the day of the accident, the pilot made an uneventful flight in the airplane from NC03 to Anson County Airport (AFP), Wadesboro, North Carolina. Before the day of the accident, the airplane had not been flown for about 15 years.

The pilot purchased 51 gallons of fuel at AFP and departed for X14. According to witnesses, during startup, the engine sputtered and backfired. Shortly after takeoff, the engine sputtered and backfired again. The airplane then turned left and descended nose down into wooded terrain, where a postcrash fire ensued.

Pilot Information

Certificate:	Private	**Age:**	71,Male
Airplane Rating(s):	Single-engine land	**Seat Occupied:**	Left
Other Aircraft Rating(s):	None	**Restraint Used:**	Unknown
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:**	December 4, 2019
Occupational Pilot:	No	**Last Flight Review or Equivalent:**	
Flight Time:	800 hours (Total, all aircraft)		

The pilot's logbook was not recovered during the investigation. On an insurance application for a September 30, 2020, policy renewal, the pilot reported a total flight experience of 800 hours, of which 100 hours were accumulated during the preceding 12 months. The application was for a different make and model airplane than the accident airplane. The pilot's experience in the accident airplane make and model could not be determined from the available evidence.

Aircraft and Owner/Operator Information

Aircraft Make:	Piper	**Registration:**	N8262P
Model/Series:	PA24 250	**Aircraft Category:**	Airplane
Year of Manufacture:	1963	**Amateur Built:**	
Airworthiness Certificate:	Normal	**Serial Number:**	24-3515
Landing Gear Type:	Retractable - Tricycle	**Seats:**	4
Date/Type of Last Inspection:		**Certified Max Gross Wt.:**	2900 lbs
Time Since Last Inspection:		**Engines:**	1 Reciprocating
Airframe Total Time:		**Engine Manufacturer:**	LYCOMING
ELT:		**Engine Model/Series:**	O-540-A1D5
Registered Owner:	On file	**Rated Power:**	250 Horsepower
Operator:	On file	**Operating Certificate(s) Held:**	None

The maintenance logbooks were not recovered during the investigation.

Meteorological Information and Flight Plan

Conditions at Accident Site:	Visual (VMC)	**Condition of Light:**	Day
Observation Facility, Elevation:	AFP,299 ft msl	**Distance from Accident Site:**	1 Nautical Miles
Observation Time:	10:15 Local	**Direction from Accident Site:**	140°
Lowest Cloud Condition:	Clear	**Visibility**	10 miles
Lowest Ceiling:	None	**Visibility (RVR):**	
Wind Speed/Gusts:	3 knots /	**Turbulence Type Forecast/Actual:**	None / None
Wind Direction:	290°	**Turbulence Severity Forecast/Actual:**	N/A / N/A
Altimeter Setting:	29.95 inches Hg	**Temperature/Dew Point:**	28°C / 23°C
Precipitation and Obscuration:	No Obscuration; No Precipitation		
Departure Point:	Wadesboro, NC	**Type of Flight Plan Filed:**	None
Destination:	LaBelle, FL (X14)	**Type of Clearance:**	None
Departure Time:		**Type of Airspace:**	Class G

Airport Information

Airport:	Anson County Airport AFP	**Runway Surface Type:**	Asphalt
Airport Elevation:	299 ft msl	**Runway Surface Condition:**	Dry
Runway Used:	34	**IFR Approach:**	None
Runway Length/Width:	5498 ft / 100 ft	**VFR Approach/Landing:**	None

Wreckage and Impact Information

Crew Injuries:	1 Fatal	**Aircraft Damage:**	Destroyed
Passenger Injuries:	1 Fatal	**Aircraft Fire:**	On-ground
Ground Injuries:		**Aircraft Explosion:**	None
Total Injuries:	2 Fatal	**Latitude, Longitude:**	35.030833,-80.089167

The wreckage came to rest inverted, oriented to the east with no debris path observed, and located about 0.5 miles north-northwest of the runway 34 departure end. The cockpit and cabin were partially consumed by fire. The throttle mixture and propeller levers were observed

in their fully forward position. Both magnetos were selected, and the electric fuel pump switch was in the on position. The fuel selector valve, which exhibited thermal damage, had separated and was positioned to the left main fuel tank.

Measurement of the flap actuator jackscrew corresponded to the flaps' retracted setting, and measurement of the landing gear actuator cable corresponded to the landing gear retracted position. Flight control continuity was established from the cockpit area (through cable impact and recovery separations) to the respective flight control surfaces (ailerons, rudder, stabilator, and stabilator trim.)

The engine came to rest inverted. One propeller blade remained attached to the propeller hub, and the other blade had separated and was located underneath the engine. Both blades exhibited tip curling, and the blade that remained attached exhibited leading-edge damage. The engine sustained front impact damage; as a result, the crankshaft could be rotated by hand only about 90°. Camshaft and crankshaft continuity were confirmed to the rear accessory section of the engine. Holes were drilled into the top of the engine crankcase to facilitate visual and borescope examination. Additionally, because fire consumed the oil sump and a portion of the lower crankcase, visual and borescope examination could also be accomplished from the underside of the engine. Visual and borescope examination of the cylinders and crankcase revealed no preimpact mechanical malfunctions.

The carburetor had separated from the engine due to impact and sustained thermal damage. Disassembly of the carburetor revealed that the two floats were present at the bottom of the bowl and that all seals were destroyed. The carburetor fuel inlet screen had no debris. The engine-driven fuel pump remained attached to the engine but was destroyed. All fuel and oil hoses were destroyed by fire. Both magnetos remained attached to the engine and exhibited thermal damage. The right magneto was rotated by hand, but no spark was produced. The left magneto could not be rotated by hand. Fire damage precluded testing of the carburetor and magnetos.

Testing of the airport fuel supply did not reveal any anomalies, and no issues were reported with other airplanes that received airport fuel that day.

Medical and Pathological Information

An autopsy of the pilot was performed by the Mecklenburg County Medical Examiners' Office, Charlotte, North Carolina. The cause of death was blunt force injuries.

Toxicology testing performed by the Federal Aviation Administration Forensic Sciences

Laboratory identified ethanol in the pilot's muscle (0.08 gm/hg) and brain (0.029 gm/hg). In addition, N-propanol and N-butanol were found in the pilot's muscle. Ethanol is primarily a social drug with a powerful central nervous system depressant. After ingestion, ethanol is quickly distributed throughout the body's tissues and fluids. Ethanol may also be produced in body tissues postmortem. N propanol and N-butanol are additional types of alcohol that are formed in tissues postmortem tissues.

Meclizine was found in the pilot's liver, and amlodipine was found in his liver and muscle tissues. Meclizine is an antiemetic available over the counter and by prescription; it is often used to treat motion sickness. It carries these warnings about performance: "do not exceed recommended dosage; drowsiness may occur; avoid alcoholic drinks; alcohol, sedatives, and tranquilizers may increase drowsiness; be careful when driving a motor vehicle or operating machinery." Amlodipine is a blood pressure medication that is generally considered not to be impairing.

Administrative Information

Investigator In Charge (IIC):	Gretz, Robert
Additional Participating Persons:	Michael Guidice; FAA/FSDO; Charlotte, NC Damian Galbraith; Piper Aircraft; Vero Beach, FL James Childers; Lycoming Engines; Williamsport, PA
Original Publish Date:	July 26, 2023
Last Revision Date:	
Investigation Class:	Class 3
Note:	
Investigation Docket:	https://data.ntsb.gov/Docket?ProjectID=103731