Aviation Investigation Final Report

Location:	Peachtree City, Georgia	**Accident Number:**	MIA02LA017
Date & Time:	November 16, 2001, 18:08 Local	**Registration:**	N8183P
Aircraft:	Piper PA-24-250	**Aircraft Damage:**	Substantial
Defining Event:		**Injuries:**	1 Minor
Flight Conducted Under:	Part 91: General aviation		

Analysis

The pilot stated that on November 16, 2001, he prepared to depart from his home airport, McCollum Field. As he performed an engine runup, he found the left magneto was not operating. He returned to the ramp and his mechanic disconnected and then reconnected the magneto "P" leads. The left magneto began to work. He departed McCollum Field and went to Peachtree City. He then flew to Tara Field, at Hampton, Georgia. When leaving Tara Field, he found that the left magneto was again inoperative. He called his mechanic and was told to disconnect the "P" leads and fly home. With the "P" leads disconnected, he could not check the magnetos. During takeoff, the engine appeared to develop full power. The EGT was normal. About 5 minutes after departure, the EGT pegged out high and one of the magnetos appeared to have quit. About a minute later, the engine quit. Atlanta Approach gave him radar vectors to the closest airport, Peachtree City. He could not make it to the airport and landed in a field with the gear down and full wing flaps extended. During rollout in the field, the airplane collided with a drainage ditch. The landing gear collapsed and the airplane slid to a stop. The magnetos had been overhauled by a local mechanic about 100 flight hours before the accident. During examination prior to running the engine after the accident, the "P" lead was disconnected from the right magneto and the spark retard lead was disconnected from the left magneto. The leads were reconnected and the engine was started. Only the right magneto was operating. The engine was operated to 1,500 RPM with a club propeller in the feathered position. The was no evidence of mechanical failure or malfunction of the engine assembly.The magnetos were tested at the manufacturers facilities. The left magneto condenser was inoperative causing the magneto to not operate. The right magneto operated normally. Manufacturer personnel stated that with one magneto inoperative, the exhaust gas temperature will become elevated due inefficient burning in the cylinder which carries over into the exhaust area. When you remove the "P" lead on these magnetos, they actually ground internally and become inoperative. Sometimes contamination prevents them from grounding immediately when the "P" lead is removed, but they eventually ground and become inoperative. He believes that with the spark retard disconnected on the left magneto and the "P" lead disconnected on the right magneto,

that the left and right magnetos operated for takeoff due to the condenser working at this time on the left magneto and that the "P" lead internal grounding had contamination that prevented it from grounding immediately after removal of the "P" lead. Takeoff was normal at full power due to both magnetos working. Then either the left magneto quit due the condenser failing or the right quit due to it becoming internally grounded. The exhaust gas temperature went high and a small loss of power could be noted. Then the second magneto quit resulting in failure of the engine.

Probable Cause and Findings

The National Transportation Safety Board determines the probable cause(s) of this accident to be: The pilot's attempted operation of the aircraft with known deficiencies in the engine ignition system resulting in failure of the engine due to ignition system failure and damage to the airplane during the subsequent forced landing.

Findings

Occurrence #1: LOSS OF ENGINE POWER
Phase of Operation: CRUISE

Findings
1. IGNITION SYSTEM,MAGNETO - FAILURE,PARTIAL
2. MAINTENANCE,ADJUSTMENT - IMPROPER - PILOT IN COMMAND
3. (C) OPERATION WITH KNOWN DEFICIENCIES IN EQUIPMENT - ATTEMPTED - PILOT IN COMMAND
4. IGNITION SYSTEM - FAILURE,TOTAL

Occurrence #2: FORCED LANDING
Phase of Operation: EMERGENCY DESCENT/LANDING

Occurrence #3: ON GROUND/WATER ENCOUNTER WITH TERRAIN/WATER
Phase of Operation: LANDING - FLARE/TOUCHDOWN

Findings
5. TERRAIN CONDITION - DITCH

Factual Information

On November 16, 2001, about 1808 eastern standard time, a Piper PA-24-250, N8183P, registered to an individual, collided with a ditch while making a forced landing following loss of engine power near Peachtree City, Georgia, while on a 14 CFR Part 91 business flight. Visual meteorological conditions prevailed at the time and no flight plan was filed. The airplane received substantial damage, and the commercial-rated pilot received minor injuries. The flight originated from Hampton, Georgia, the same day, about 1750.

The pilot stated that on November 16, 2001, he prepared to depart from his home airport, McCollum Field. As he performed an engine runup, he found the left magneto was not operating. He returned to the ramp and his mechanic disconnected and then reconnected the magneto "P" leads. The left magneto began to work. He departed McCollum Field and went to Peachtree City. He then flew to Tara Field, at Hampton, Georgia. When leaving Tara Field, he found that the left magneto was again inoperative. He called his mechanic and was told to disconnect the "P" leads and fly home. With the "P" leads disconnected, he could not check the magnetos. During takeoff, the engine appeared to develop full power. The EGT was normal. About 5 minutes after departure, the EGT pegged out high and one of the magnetos appeared to have quit. About a minute later, the engine quit. Atlanta Approach gave him radar vectors to the closest airport, Peachtree City. He could not make it to the airport and landed in a field with the gear down and full wing flaps extended. During rollout in the field, the airplane collided with a drainage ditch. The landing gear collapsed and the airplane slid to a stop. The magnetos had been overhauled by a local mechanic about 100 flight hours before the accident. (See record of telephone conversation.)

A mechanic for the company that recovered the airplane from the crash site stated he was present when the engine of N8183P was run on the airplane after the accident. The FAA and NTSB were present. During examination prior to running the engine, the "P" lead was disconnected from one magneto and the spark retard lead was disconnected from the other magneto. They reconnected the leads and the engine was started. Only one magneto was operating. The engine was operated to 1,500 RPM with a club propeller in the feathered position. The was no evidence of mechanical failure or malfunction of the engine assembly. The magnetos were taken by the NTSB for further testing. (See record of telephone conversation.)

A engineer at Teledyne Continental Motors, the magneto manufacturer, stated he examined the magnetos from N8183P with an NTSB investigator. The left magneto has a "P" lead and a spark retard lead, which is used for starting. The right magneto did not have the spark retard lead, only a "P" lead. The left magneto condenser was inoperative causing the magneto to not operate. The right magneto operated normally. With one magneto inoperative, the exhaust gas temperature will become elevated due inefficient burning in the cylinder which carries over into

the exhaust area. When you remove the "P" lead on these magnetos, they actually ground internally and become inoperative. Sometimes contamination prevents them from grounding immediately when the "P" lead is removed, but they eventually ground and become inoperative. He believes that with the spark retard disconnected on the left magneto and the "P" lead disconnected on the right magneto, that the left and right magnetos operated for takeoff due to the condenser working at this time on the left magneto and that the "P" lead internal grounding had contamination that prevented it from grounding immediately after removal of the "P" lead. Takeoff was normal at full power due to both magnetos working. Then either the left magneto quit due the condenser failing or the right quit due to it becoming internally grounded. The exhaust gas temperature went high and a small loss of power could be noted. Then the second magneto quit resulting in failure of the engine.

Pilot Information

Certificate:	Commercial	**Age:**	63,Male
Airplane Rating(s):	Single-engine land	**Seat Occupied:**	Left
Other Aircraft Rating(s):	None	**Restraint Used:**	
Instrument Rating(s):	Airplane	**Second Pilot Present:**	No
Instructor Rating(s):	None	**Toxicology Performed:**	No
Medical Certification:	Class 3 Valid Medical--w/ waivers/lim	**Last FAA Medical Exam:**	April 5, 2000
Occupational Pilot:	No	**Last Flight Review or Equivalent:**	June 17, 2001
Flight Time:	2709 hours (Total, all aircraft), 257 hours (Total, this make and model), 2685 hours (Pilot In Command, all aircraft), 30 hours (Last 90 days, all aircraft), 18 hours (Last 30 days, all aircraft), 1 hours (Last 24 hours, all aircraft)		

Aircraft and Owner/Operator Information

Aircraft Make:	Piper	**Registration:**	N8183P
Model/Series:	PA-24-250	**Aircraft Category:**	Airplane
Year of Manufacture:		**Amateur Built:**	
Airworthiness Certificate:	Normal	**Serial Number:**	24-3438
Landing Gear Type:	Retractable - Tricycle	**Seats:**	4
Date/Type of Last Inspection:	November 9, 2000 Annual	**Certified Max Gross Wt.:**	3100 lbs
Time Since Last Inspection:	122 Hrs	**Engines:**	1 Reciprocating
Airframe Total Time:	2520 Hrs at time of accident	**Engine Manufacturer:**	Lycoming
ELT:	Installed, activated, did not aid in locating accident	**Engine Model/Series:**	O-540-A1D5
Registered Owner:	Robert W. Fulton	**Rated Power:**	250 Horsepower
Operator:		**Operating Certificate(s) Held:**	None

Meteorological Information and Flight Plan

Conditions at Accident Site:	Visual (VMC)	**Condition of Light:**	Dusk
Observation Facility, Elevation:	FFC,808 ft msl	**Distance from Accident Site:**	2 Nautical Miles
Observation Time:	18:30 Local	**Direction from Accident Site:**	200°
Lowest Cloud Condition:	Clear	**Visibility**	8 miles
Lowest Ceiling:	None	**Visibility (RVR):**	
Wind Speed/Gusts:	/	**Turbulence Type Forecast/Actual:**	/
Wind Direction:		**Turbulence Severity Forecast/Actual:**	/
Altimeter Setting:	30.2 inches Hg	**Temperature/Dew Point:**	12°C / 3°C
Precipitation and Obscuration:	No Obscuration; No Precipitation		
Departure Point:	Hampton, GA (4A7)	**Type of Flight Plan Filed:**	None
Destination:	Marietta, GA (RYY)	**Type of Clearance:**	VFR
Departure Time:	17:50 Local	**Type of Airspace:**	Class G

Wreckage and Impact Information

Crew Injuries:	1 Minor	**Aircraft Damage:**	Substantial
Passenger Injuries:		**Aircraft Fire:**	None
Ground Injuries:	N/A	**Aircraft Explosion:**	None
Total Injuries:	1 Minor	**Latitude, Longitude:**	33.356945,-84.572219

Administrative Information

Investigator In Charge (IIC):	Kennedy, Jeff
Additional Participating Persons:	Tommy Busch; FAA FSDO; Atlanta, GA Phillip Powell; NTSB; Atlanta, GA
Original Publish Date:	July 25, 2002
Last Revision Date:	
Investigation Class:	Class
Note:	
Investigation Docket:	https://data.ntsb.gov/Docket?ProjectID=53789