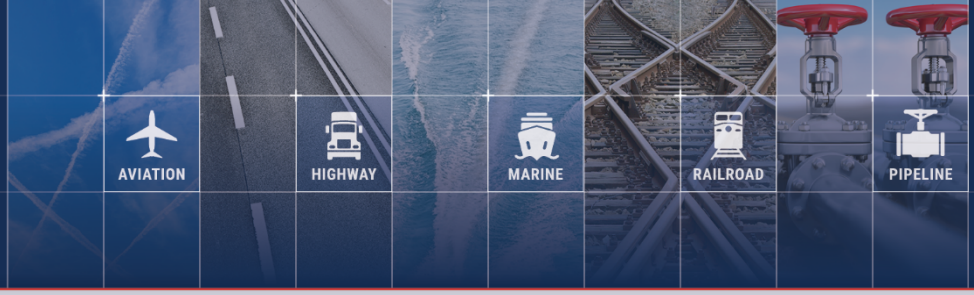

Aviation Investigation Final Report

Location:	Monmouth, Illinois	**Accident Number:**	CEN18FA235
Date & Time:	June 24, 2018, 11:15 Local	**Registration:**	N94070
Aircraft:	Ercoupe 415 D	**Aircraft Damage:**	Destroyed
Defining Event:	Loss of engine power (total)	**Injuries:**	2 Fatal
Flight Conducted Under:	Part 91: General aviation - Personal		

Analysis

The private pilot and a pilot-rated passenger departed on a local flight to complete touch-and-go landings at a nearby airport. The airplane was in the traffic pattern when witnesses reported that the airplane flew very low over their house and that the engine was "sputtering and backfiring." The airplane flew about 30 ft above them, made a steep left bank toward the airport, then impacted the ground in a wooded area. A postimpact fire consumed a majority of the airplane; the propeller exhibited signatures consistent with a lack of engine power at impact.

Although impact and thermal damage precluded a detailed examination of the engine and fuel system, examination did not reveal any evidence of preimpact mechanical malfunction or abnormalities that would have led to a loss of engine power. The investigation was unable to determine the cause of the loss of engine power based on the available information.

Probable Cause and Findings

The National Transportation Safety Board determines the probable cause(s) of this accident to be: A loss of engine power for reasons that could not be determined based on the available information.

Findings

Not determined	(general) - Unknown/Not determined

Factual Information

History of Flight

Maneuvering	Loss of engine power (total) (Defining event)
Maneuvering	Collision with terr/obj (non-CFIT)

On June 24, 2018, about 1115 central daylight time, an Ercoupe 415-D airplane, N94070, impacted terrain near Monmouth Municipal Airport (C66), Monmouth, Illinois. The private pilot and pilot-rated passenger were fatally injured and the airplane was destroyed. The airplane was registered to and operated by a private individual under to provisions of Title 14 *Code of Federal Regulations* Part 91 as a personal flight. Visual meteorological conditions prevailed at the time of the accident, and no flight plan was filed for the local flight, which departed Galesburg Municipal Airport (GBG) Galesburg, Illinois, at 1049.

Airport surveillance video from GBG revealed that the airplane taxied from the hangar area toward the end of runway 21 at 1044. The airplane then taxied along the parallel taxiway to the first intersection where it made a left 180° turn and taxied back to the end of runway 21. The airplane departed runway 21 at 1049.

A review of the radar data revealed that the airplane traveled west after departure from GBG. The radar track showed the airplane made several turns and continued west toward C66. The final radar target was recorded about 2 miles south of the accident site (see figure 1). A review of the GBG common traffic advisory frequency (CTAF) recording revealed that, at 1103, the pilot announced his intentions to complete a touch-and-go landing at C66.

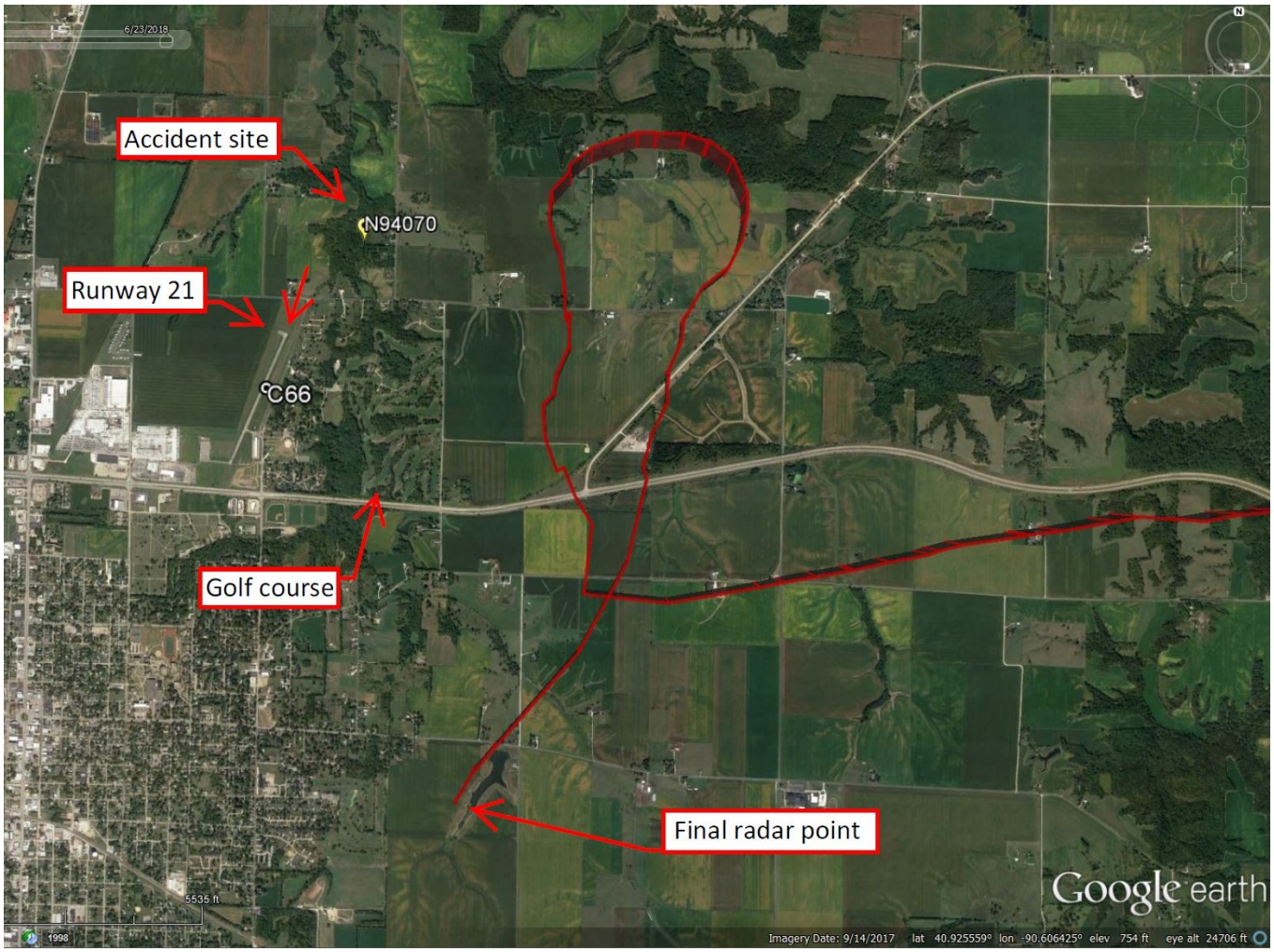

Figure 1 – Radar Track (end of flight)

A witness, who was on a golf course about 0.3 mile south of the accident site, stated that he saw the airplane flying north about 1100. He stated that "the engine sounded like it was missing and not flying smoothly." He added that the airplane continued north behind trees, which obstructed his view, but he listened to the engine sound for another 15 to 30 seconds, then he "heard the engine rev higher." The airplane's reported northbound flight path over the golf course was consistent with a left downwind leg for runway 21 at C66.

Two other witnesses, who were 1/2 mile northeast of C66, stated that the airplane was traveling east to west and flew very low over their house and the engine was "sputtering and backfiring." They stated that the airplane flew about 30 ft above them, made a steep left bank, then impacted the ground in a wooded area (see figure 2). After impact, the airplane burst into flames. They both ran to the accident site to provide assistance but were unable to help due to the fire and extreme heat.

Figure 2 – Accident Site

Pilot Information

Certificate:	Private	**Age:**	65,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:**	Yes
Instructor Rating(s):	None	**Toxicology Performed:**	Yes
Medical Certification:	Class 3 With waivers/limitations	**Last FAA Medical Exam:**	June 6, 2016
Occupational Pilot:	No	**Last Flight Review or Equivalent:**	August 13, 2016
Flight Time:	(Estimated) 361.5 hours (Total, all aircraft)		

Pilot-rated passenger Information

Certificate:	Private	**Age:**	72,Male
Airplane Rating(s):	Single-engine land	**Seat Occupied:**	Right
Other Aircraft Rating(s):	None	**Restraint Used:**	Unknown
Instrument Rating(s):	None	**Second Pilot Present:**	Yes
Instructor Rating(s):	None	**Toxicology Performed:**	Yes
Medical Certification:	Class 3 With waivers/limitations	**Last FAA Medical Exam:**	August 6, 2015
Occupational Pilot:	No	**Last Flight Review or Equivalent:**	
Flight Time:	(Estimated) 775 hours (Total, all aircraft)		

The most recent pilot logbook entry, dated March 8, 2018, was for a 1.5-hour local flight from GBG in the accident airplane. The two previous logbook entries were dated July 2017, which were also local flights in the accident airplane.

Aircraft and Owner/Operator Information

Aircraft Make:	Ercoupe	**Registration:**	N94070
Model/Series:	415 D	**Aircraft Category:**	Airplane
Year of Manufacture:	1946	**Amateur Built:**	
Airworthiness Certificate:	Normal	**Serial Number:**	1393
Landing Gear Type:	Tricycle	**Seats:**	2
Date/Type of Last Inspection:	October 19, 2017 Annual	**Certified Max Gross Wt.:**	1400 lbs
Time Since Last Inspection:		**Engines:**	1 Reciprocating
Airframe Total Time:	4135.4 Hrs as of last inspection	**Engine Manufacturer:**	Continental Motors
ELT:	Installed, not activated	**Engine Model/Series:**	O-200A
Registered Owner:		**Rated Power:**	100 Horsepower
Operator:	On file	**Operating Certificate(s) Held:**	None

Fuel records showed that the airplane was most recently fueled on March 8, 2018, with 11 gallons of 100 low-lead aviation gasoline. How much fuel was onboard the airplane before the fuel was added or whether the airplane had been fueled at any other time since March 8, 2018, could not be determined.

Meteorological Information and Flight Plan

Conditions at Accident Site:	Visual (VMC)	**Condition of Light:**	Day
Observation Facility, Elevation:	GBG,804 ft msl	**Distance from Accident Site:**	9 Nautical Miles
Observation Time:	11:15 Local	**Direction from Accident Site:**	92°
Lowest Cloud Condition:	Scattered / 2800 ft AGL	**Visibility**	10 miles
Lowest Ceiling:		**Visibility (RVR):**	
Wind Speed/Gusts:	/	**Turbulence Type Forecast/Actual:**	/
Wind Direction:		**Turbulence Severity Forecast/Actual:**	/
Altimeter Setting:	29.95 inches Hg	**Temperature/Dew Point:**	26°C / 18°C
Precipitation and Obscuration:	No Obscuration; No Precipitation		
Departure Point:	Monmouth, IL (C66)	**Type of Flight Plan Filed:**	None
Destination:	Monmouth, IL (C66)	**Type of Clearance:**	None
Departure Time:	10:49 Local	**Type of Airspace:**	Class E

Airport Information

Airport:	MONMOUTH MUNI C66	**Runway Surface Type:**	Asphalt
Airport Elevation:	753 ft msl	**Runway Surface Condition:**	Unknown
Runway Used:	21	**IFR Approach:**	None
Runway Length/Width:	2899 ft / 60 ft	**VFR Approach/Landing:**	Unknown

Wreckage and Impact Information

Crew Injuries:	1 Fatal	**Aircraft Damage:**	Destroyed
Passenger Injuries:	1 Fatal	**Aircraft Fire:**	On-ground
Ground Injuries:	N/A	**Aircraft Explosion:**	On-ground
Total Injuries:	2 Fatal	**Latitude, Longitude:**	40.93861,-90.623054(est)

A postaccident examination of the airframe revealed that the fuselage was consumed by fire. The empennage remained intact with minor impact and fire damage at the rear fuselage area. The metal structure of both wings remained mostly intact and the fabric covering was consumed by fire. The two wing fuel tanks and the header fuel tank were consumed by fire. The header tank fuel quantity gauge was found in the debris path and the metal rod was bent near the cork end. The elevator and rudder control cables remained intact and were continuous from the cockpit to the control surfaces. The aileron control tubes and associated hardware were intact from the ailerons through the wing to the fuselage;

both aileron control tubes were fractured and bent near the fuselage.

The engine came to rest inverted and remained attached to the engine mounts and the firewall. The two-blade, fixed-pitch propeller was attached to the crankshaft. One propeller blade was bent aft near mid-span and the other blade was straight with minimal damage. Neither propeller blade exhibited leading edge damage or chordwise scratches. The propeller was rotated by hand and engine continuity was confirmed through the valve train and rear accessory section; the cylinders exhibited suction and compression with the top spark plugs removed. The carburetor had separated from the engine but was sitting on the engine; the carburetor sustained fire and impact damage. The throttle cable remained attached to the throttle control arm. The mixture control cable was loose from mixture control arm and was found immediately next to the carburetor.

Although fire and impact damage to the engine limited the scope of the examination, no preimpact mechanical malfunctions or anomalies were found that would have precluded normal operation.

Medical and Pathological Information

The Warren Country Coroner's Office, Monmouth, Illinois, performed autopsies on the pilot and passenger. The pilot's cause of death was attributed to thermal injuries and the inhalation of products of combustion.

The pilot-rated passenger's autopsy revealed severe coronary artery disease with 75% stenosis of the mid right coronary artery and 75% stenosis of the proximal left anterior descending coronary artery. No thromboemboli were noted. No evidence of a recent or past heart attack was noted. The cerebral and pulmonary circulations were unremarkable. There was no obvious anatomic evidence of an incapacitating event. The passenger's cause of death was attributed to the blunt force injuries.

The Federal Aviation Administration's (FAA) Forensic Sciences Laboratory performed toxicological testing on the pilot and passenger. The pilot's toxicology detected three previously reported (during his FAA medical exam) medications: chlorthalidone, irbesartan, and carvedilol, none of which are considered impairing. Also present was naproxen, which is available in two formulations, prescription and over-the-counter (OTC). Prescription naproxen is used to relieve pain, tenderness, swelling, and stiffness caused by osteoarthritis, rheumatoid arthritis, ankylosing spondylitis and other similar conditions. OTC naproxen is used to reduce fever and to relieve mild pain. Naproxen is in a class of medications called non-steroidal anti-inflammatory drug, and use would generally not present a hazard to aviation safety.

The passenger's toxicology detected no medications, illicit drugs, ethanol, or products of combustion that could pose hazards to flight safety.

Administrative Information

Investigator In Charge (IIC):	Lindberg, Joshua
Additional Participating Persons:	Michael Veselka; Federal Aviation Administration; Springfield, IL
Original Publish Date:	November 6, 2019
Note:	The NTSB traveled to the scene of this accident.
Investigation Docket:	https://data.ntsb.gov/Docket?ProjectID=97559