Aviation Investigation Final Report

Location:	Rome, Georgia	**Accident Number:**	ATL03FA128
Date & Time:	August 17, 2003, 18:48 Local	**Registration:**	N99748
Aircraft:	Ercoupe 415-C	**Aircraft Damage:**	Destroyed
Defining Event:		**Injuries:**	2 Fatal
Flight Conducted Under:	Part 91: General aviation - Personal		

Analysis

Witnesses on the ground heard the airplane's engine sputtering and saw the airplane in what appeared to be a controlled, turning descent before the airplane disappeared from view. The airplane was found inverted in a hilly pasture about three feet from a fresh ground crater approximately 12 inches deep. Examination revealed no evidence of airframe, flight control, or engine malfunction. Examination of the fuel pump revealed some fuel and milky-white water was found in the pump, white corrosion coated the inside of the pump and screen, and some corrosion was found on the inside of the domed pump top cover.

Probable Cause and Findings

The National Transportation Safety Board determines the probable cause(s) of this accident to be: A loss of engine power due to fuel system contamination (water). Also causal was the pilot's loss of control for undetermined reasons.

Findings

Occurrence #1: LOSS OF ENGINE POWER(TOTAL) - NONMECHANICAL
Phase of Operation: CRUISE

Findings
1. (F) FUEL SYSTEM - CONTAMINATION,WATER
2. FUEL SYSTEM,PUMP - CORRODED

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

Occurrence #3: LOSS OF CONTROL - IN FLIGHT
Phase of Operation: EMERGENCY DESCENT/LANDING

Findings
3. (C) REASON FOR OCCURRENCE UNDETERMINED

Occurrence #4: IN FLIGHT COLLISION WITH TERRAIN/WATER
Phase of Operation: DESCENT - UNCONTROLLED

Findings
4. TERRAIN CONDITION - OPEN FIELD
5. TERRAIN CONDITION - ROUGH/UNEVEN

Factual Information

HISTORY OF FLIGHT

On August 17, 2003, at 1848 eastern daylight time, an Ercoupe 415-C, N99748, registered to and operated by the private pilot, collided into a pasture in Rome, Georgia. The personal flight was operated under the provisions of Title 14 CFR Part 91 with no flight plan filed. Visual meteorological conditions prevailed. The private pilot and commercial pilot-rated passenger received fatal injuries, and the airplane was destroyed. The flight departed Richard B. Russell Airport, in Rome, Georgia, about 1840 on August 17, 2003.

The flight was en route to Cartersville, Georgia, where the airplane was based. A witness about eight miles south of the Rome airport reported seeing the airplane flying from the north about 1,000 to 1,500 feet above the ground. He stated he heard the airplane's engine rpm "die down" suddenly for about four or five seconds, then he heard the engine "come back up." He stated the airplane then made a left turn back toward the north and began what appeared to be a controlled descent. The witness stated that, as the airplane turned left, a flash or flame appeared from the underside of the fuselage. A second witness made a similar report of "sputtering" engine noises, and he stated he saw the airplane turning left and descending. He stated he saw orange flames originate from the front of the airplane and "roll" rearward across the bottom of the fuselage, and the flames appeared twice while the airplane was banking to the left. He described the flames as appearing in a flash or burst like lighting a match, and he did not see any smoke. He stated the airplane's descent did not appear extreme, and he thought the pilot may have spotted a field to land in or was heading toward the airport in Rome.

After the airplane disappeared from view, witnesses drove to look for it. They found it approximately one-half mile from where they saw it begin its descent, and one witness used a cellular telephone to call the 911 operator. The wreckage was located in a hilly cow pasture 7.4 nautical miles southeast of the Rome airport.

PERSONNEL INFORMATION

The pilot held a private pilot certificate issued January 21, 1970, with ratings for airplane single-engine land and airplane multi-engine land. The pilot held a third class medical certificate dated March 6, 2003, with the restriction, "must wear corrective lenses for near and distant vision," and he reported a total of 600 flight hours on his application for the medical certificate. A review of the pilot's logbook revealed he logged 259 hours pilot-in-command time since April 1997, and 245 hours in the Ercoupe 415-C since December 1999. The pilot logged a biennial flight review as required by Title 14 CFR Part 61.56 on July 13, 2003.

The passenger held a commercial pilot certificate issued January 18, 2002, with ratings for airplane multi-engine land and instrument airplane, with private pilot privileges for airplane single-engine land. The passenger held a first class medical certificate dated March 27, 2002, and he reported a total of 300 flight hours on his application for the medical certificate.

AIRCRAFT INFORMATION

The two-seat airplane was manufactured in 1946 and was certificated as an Ercoupe model 415-C. It was powered by a Continental C-85-12, 85-horsepower engine and was equipped with a Falcon Manufacturing Corporation fixed-pitch wood propeller. Per Federal Aviation Administration Aircraft Specification No. A-718, the airplane displayed a placard stating, "This airplane characteristically incapable of spinning." The airplane was equipped with a red rotating beacon on the underside of the fuselage.

Examination of the airframe and engine logbooks revealed an annual inspection was completed on March 17, 2003, at an airframe total time of 2127.8 hours and an engine time since major overhaul of 997.6 hours. The tachometer, which was found damaged with the glass broken, displayed a reading of 2158.50 hours at the accident site.

WRECKAGE AND IMPACT INFORMATION

Examination of the accident site revealed the airplane came to rest inverted approximately three feet north of a fresh ground crater approximately 12 inches deep. The crater contained fragments of one wood propeller blade embedded in the dirt, and ground impressions consistent with the size, shape, and orientation of the wing leading edges and main landing gear struts were observed adjacent to the south side of the crater. There was no evidence of soot or fire damage observed in the cabin, or on the engine and airframe.

The cabin area, fuselage and empennage was crushed and buckled. The tail assembly displayed an approximate 45-degree buckling aft of the cabin area, and a 90-degree upward buckling beneath the elevator. Both wings were crushed from the leading edge aft, and the wing fuel tanks and header fuel tank were crushed and breached. The ailerons, elevator, elevator trim tab, and rudders were attached to the airframe. The aileron pushrods were damaged.

The control mast assembly was found attached to the mid cabin floor with the control cables attached. The elevator trim actuator was found attached to the control surface, and the elevator arm assembly was found in the tail cone with the cables attached. The right and left rudder pushrods were found attached to the rudder bellcrank, and the left rudder actuator was found separated. The rudder cable fairlead (connector) was found in place. The control column shaft displayed bending deformation, and the right side of the t-bar was separated. The control column chain and cable assembly remained attached to the shaft. There was no evidence of airframe or flight control malfunction observed.

The engine was found inverted, caked with fresh dirt, and crush damaged with a portion of one propeller blade attached. Examination of the engine revealed the oil sump was crushed, the exhaust pipes were crushed, and the intake pipes were crushed on the right side. The No. 3 intake pushrod and the No. 4 exhaust pushrod were bent. The crankshaft was rotated and continuity was established to all of the pistons and the accessory drive. There was no evidence of engine malfunction observed.

Both magnetos were damaged, the carburetor was separated, and the throttle arm was separated from the carburetor body. The carburetor metal float and needle valve were found in place and free for normal movement. The fuel pump body was damaged, and the outlet check valve was found unseated in its port. Disassembly of the pump body revealed fuel and milky-white water were found in the pump body, white corrosion coated the inside of pump and screen, and some corrosion was found on the inside of the domed pump top cover.

MEDICAL AND PATHOLOGICAL INFORMATION

The Georgia Bureau of Investigation, Division of Forensic Sciences, performed autopsy examinations of the pilot and passenger on August 18, 2003. The medical examiner's report stated the cause of death of the pilot was "... blunt force injuries ...," and the cause of death of the passenger was "... blunt force injuries ...."

Forensic toxicology on specimens from the pilot was performed by the Federal Aviation Administration Bioaeronautical Sciences Research Laboratory, Oklahoma City, Oklahoma. The report stated no carbon monoxide, cyanide, nor drugs were detected in the blood, and no ethanol was detected in the vitreous.

ADDITIONAL INFORMATION

A review of Federal Aviation Administration Airworthiness Directive AD 81-07-06, for Teledyne Continental Motors models including the C85, equipped with AC fuel pump models including part number 40585: "... at intervals not to exceed 12 months after the last inspection ... to prevent fuel starvation due to fuel flow restriction through the pump screen ... c. Remove fuel pump screen, d. Inspect fuel pump screen for contamination. (1) If contaminated, clean fuel pump and clean screen. (2) If fuel pump is damaged by corrosion, replace with an applicable serviceable fuel pump. (3) If fuel pump screen is damaged by corrosion or handling, replace with a serviceable fuel pump screen ...." A review of maintenance records for the airplane revealed AD 81-07-06 was signed off as complied with by inspection on March 13, 2003, at a tachometer time of 2126.6.

Emergency response personnel reported the pilot's seat belt was buckled, and the passenger's seat belt was not buckled. Examination of the passenger's seat belt revealed the lap buckle was found unbuckled with fresh soil and grass observed in the receiving portion of the buckle. A field test revealed the buckle latched when the flat portion was inserted, and it remained latched when force was applied. Both sides of the passenger's lap belt assembly remained

attached to the airframe. The seat belt webbing on one side of the adjustable lap belt was extended to a length of 19 inches with 12 inches of webbing remaining, and the other side was extended to a length of 20 inches with eight inches of webbing remaining.

The wreckage was released to a claims representative of International Loss Management, Inc., Norcross, Georgia, on February 17, 2004.

Pilot Information

Certificate:	Private	**Age:**	51,Male
Airplane Rating(s):	Single-engine land; Multi-engine land	**Seat Occupied:**	Left
Other Aircraft Rating(s):	None	**Restraint Used:**	
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:**	March 6, 2003
Occupational Pilot:		**Last Flight Review or Equivalent:**	July 13, 2003
Flight Time:	600 hours (Total, all aircraft), 245 hours (Total, this make and model), 20 hours (Last 90 days, all aircraft), 3 hours (Last 30 days, all aircraft), 1 hours (Last 24 hours, all aircraft)		

Aircraft and Owner/Operator Information

Aircraft Make:	Ercoupe	**Registration:**	N99748
Model/Series:	415-C	**Aircraft Category:**	Airplane
Year of Manufacture:		**Amateur Built:**	
Airworthiness Certificate:	Normal	**Serial Number:**	2371
Landing Gear Type:	Tricycle	**Seats:**	2
Date/Type of Last Inspection:	March 17, 2003 Annual	**Certified Max Gross Wt.:**	1260 lbs
Time Since Last Inspection:	31 Hrs	**Engines:**	1 Reciprocating
Airframe Total Time:	2159 Hrs at time of accident	**Engine Manufacturer:**	Teledyne Continental
ELT:	Installed, not activated	**Engine Model/Series:**	C-85-12
Registered Owner:	Claude Inman O'Steen, Jr.	**Rated Power:**	85 Horsepower
Operator:		**Operating Certificate(s) Held:**	None

Meteorological Information and Flight Plan

Conditions at Accident Site:	Visual (VMC)	**Condition of Light:**	Day
Observation Facility, Elevation:	KRMG,644 ft msl	**Distance from Accident Site:**	7 Nautical Miles
Observation Time:	18:53 Local	**Direction from Accident Site:**	315°
Lowest Cloud Condition:	Clear	**Visibility**	4 miles
Lowest Ceiling:	None	**Visibility (RVR):**	
Wind Speed/Gusts:	3 knots /	**Turbulence Type Forecast/Actual:**	/
Wind Direction:	230°	**Turbulence Severity Forecast/Actual:**	/
Altimeter Setting:	29.9 inches Hg	**Temperature/Dew Point:**	31°C / 24°C
Precipitation and Obscuration:	No Obscuration; No Precipitation		
Departure Point:	Rome, GA (KRMG)	**Type of Flight Plan Filed:**	None
Destination:	Cartersville, GA (KVPC)	**Type of Clearance:**	None
Departure Time:	06:40 Local	**Type of Airspace:**	Class G

Airport Information

Airport:	Rome - Richard B Russell KRMG	**Runway Surface Type:**	
Airport Elevation:	644 ft msl	**Runway Surface Condition:**	Unknown
Runway Used:		**IFR Approach:**	None
Runway Length/Width:		**VFR Approach/Landing:**	Forced landing

Wreckage and Impact Information

Crew Injuries:	1 Fatal	**Aircraft Damage:**	Destroyed
Passenger Injuries:	1 Fatal	**Aircraft Fire:**	None
Ground Injuries:	N/A	**Aircraft Explosion:**	None
Total Injuries:	2 Fatal	**Latitude, Longitude:**	34.272499,-85.043891

Administrative Information

Investigator In Charge (IIC):	Gagne, Catherine
Additional Participating Persons:	Robert L West; Atlanta FSDO - 11; College Park, GA John T Kent; Teledyne Continental Motors, Inc.; Seagoville, TX
Original Publish Date:	September 1, 2004
Last Revision Date:	
Investigation Class:	Class
Note:	The NTSB traveled to the scene of this accident.
Investigation Docket:	https://data.ntsb.gov/Docket?ProjectID=57720