Aviation Investigation Final Report

Location:	HARTSELLE, Alabama	**Accident Number:**	MIA99LA025
Date & Time:	October 31, 1998, 13:30 Local	**Registration:**	N99924
Aircraft:	Ercoupe (Eng & Research Corp.) 415-C	**Aircraft Damage:**	Substantial
Defining Event:		**Injuries:**	1 Serious
Flight Conducted Under:	Part 91: General aviation - Personal		

Analysis

The engine lost power as the pilot turned onto the downwind leg for landing. As the pilot approached a field for landing, the aircraft collided with a power line and then the ground. Postcrash examination of the engine showed it was operating with an excessive rich fuel mixture. The carburetor float was found stuck in the full needle valve open position due to excessive solder on the float fulcrum contacting the bowl wall. The carburetor had been recently modified by installing a new style needle valve, which also required the addition of weight to the float fulcrum with solder.

Probable Cause and Findings

The National Transportation Safety Board determines the probable cause(s) of this accident to be: Improper modification of the carburetor float by maintenance personnel resulting in the float sticking in the full needle valve open position and failure of the engine due to excessive fuel flow.

Findings

Occurrence #1: LOSS OF ENGINE POWER(TOTAL) - MECH FAILURE/MALF
Phase of Operation: APPROACH - VFR PATTERN - DOWNWIND

Findings
1. FUEL SYSTEM,CARBURETOR FLOAT - MOVEMENT RESTRICTED

2. (C) MAINTENANCE,MODIFICATION - IMPROPER - OTHER MAINTENANCE PERSONNEL
3. FLUID,FUEL - EXCESSIVE FLOW/OUTPUT

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

Occurrence #3: IN FLIGHT COLLISION WITH OBJECT
Phase of Operation: EMERGENCY DESCENT/LANDING

Findings
4. OBJECT - WIRE,TRANSMISSION

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

Findings
5. TERRAIN CONDITION - GROUND

Factual Information

On October 31, 1998, about 1330 central standard time, an Ercoupe 415-C, N99924, registered to an individual, collided with a power line and crashed in a field while making a forced landing following loss of engine power at Hartselle, Alabama, while on a Title 14 CFR Part 91 personal flight. Visual meteorological conditions prevailed at the time and no flight plan was filed. The aircraft received substantial damage and the private-rated pilot received serious injuries. The flight originated from Roundtree Field, Hartselle, Alabama, about 1245.

The pilot stated this was the first flight since extensive repairs and restoration to the aircraft. After takeoff he departed the airport traffic pattern and climbed to 3,500 feet. He performed maneuvers for about 30 minutes and then returned to the airport traffic for takeoffs and landings. After the second landing, he again took off. As he turned onto the downwind leg, the engine quit without warning. A quick attempt to restart the engine was unsuccessful. He selected a landing site for a forced landing and turned toward it. He was unable to maintain sufficient altitude to clear a power line and the aircraft collided with it, causing the aircraft to nose down. The aircraft then impacted a ditch and bounced and landed on the landing gear, from which a normal landing roll was made.

Postcrash examination of the engine was performed by FAA inspectors. The spark plugs were found to have black soot deposits. The exhaust system also had black soot deposits. The engine was started and operated at idle power for a short time before quitting. A higher engine power was not attempted due to a fuel leak from fuel line damage during ground impact.

The Bendix-Stromberg float carburetor was removed from the engine by FAA inspectors and taken to an overhaul facility. The float was found stuck in the full needle valve open position. Excessive solder on the float fulcrum was contacting the edge of the bowl causing it to stick. The carburetor had been modified in accordance with Bendix-Stromberg Service Bulletin 84 which calls for installation of a new style needle valve which in turn calls for adding of solder weight to the float fulcrum. The service bulletin warns that the added weight should not interfere with the movement of the float. (See attached FAA inspector report)

Pilot Information

Certificate:	Private	**Age:**	60,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:**	July 10, 1998
Occupational Pilot:	No	**Last Flight Review or Equivalent:**	
Flight Time:	609 hours (Total, all aircraft), 41 hours (Total, this make and model), 507 hours (Pilot In Command, all aircraft), 10 hours (Last 90 days, all aircraft), 6 hours (Last 30 days, all aircraft), 1 hours (Last 24 hours, all aircraft)		

Aircraft and Owner/Operator Information

Aircraft Make:	Ercoupe (Eng & Research Corp.)	**Registration:**	N99924
Model/Series:	415-C 415-C	**Aircraft Category:**	Airplane
Year of Manufacture:		**Amateur Built:**	
Airworthiness Certificate:	Normal	**Serial Number:**	2547
Landing Gear Type:	Tricycle	**Seats:**	2
Date/Type of Last Inspection:	October 31, 1998 Annual	**Certified Max Gross Wt.:**	1260 lbs
Time Since Last Inspection:	1 Hrs	**Engines:**	1 Reciprocating
Airframe Total Time:	1202 Hrs	**Engine Manufacturer:**	Continental
ELT:	Installed, not activated	**Engine Model/Series:**	C75-12
Registered Owner:	MELBORNE D. THRASHER	**Rated Power:**	85 Horsepower
Operator:		**Operating Certificate(s) Held:**	None
Operator Does Business As:		**Operator Designator Code:**	

Meteorological Information and Flight Plan

Conditions at Accident Site:	Visual (VMC)	**Condition of Light:**	Day
Observation Facility, Elevation:	HSV ,630 ft msl	**Distance from Accident Site:**	20 Nautical Miles
Observation Time:	13:56 Local	**Direction from Accident Site:**	45°
Lowest Cloud Condition:	Clear	**Visibility**	10 miles
Lowest Ceiling:	None	**Visibility (RVR):**	
Wind Speed/Gusts:	7 knots /	**Turbulence Type Forecast/Actual:**	/
Wind Direction:	350°	**Turbulence Severity Forecast/Actual:**	/
Altimeter Setting:	30 inches Hg	**Temperature/Dew Point:**	26°C / 7°C
Precipitation and Obscuration:	No Obscuration; No Precipitation		
Departure Point:	(5M0)	**Type of Flight Plan Filed:**	Unknown
Destination:		**Type of Clearance:**	None
Departure Time:	12:45 Local	**Type of Airspace:**	Class G

Airport Information

Airport:		**Runway Surface Type:**	
Airport Elevation:		**Runway Surface Condition:**	
Runway Used:	0	**IFR Approach:**	
Runway Length/Width:		**VFR Approach/Landing:**	Forced landing

Wreckage and Impact Information

Crew Injuries:	1 Serious	**Aircraft Damage:**	Substantial
Passenger Injuries:		**Aircraft Fire:**	None
Ground Injuries:	N/A	**Aircraft Explosion:**	None
Total Injuries:	1 Serious	**Latitude, Longitude:**	34.429134,-86.929824(est)

Administrative Information

Investigator In Charge (IIC):	Kennedy, Jeffrey
Additional Participating Persons:	CHARLES VARANO; BIRMINGHAM , AL
Original Publish Date:	August 3, 1999
Last Revision Date:	
Investigation Class:	Class
Note:	
Investigation Docket:	https://data.ntsb.gov/Docket?ProjectID=45191