Aviation Investigation Final Report

Location:	Tyre, New York	**Accident Number:**	ERA12LA349
Date & Time:	May 20, 2012, 14:58 Local	**Registration:**	N122BA
Aircraft:	BELCHER, GERALD C BEL AIRE 2000	**Aircraft Damage:**	Substantial
Defining Event:	Loss of engine power (partial)	**Injuries:**	1 Minor
Flight Conducted Under:	Part 91: General aviation - Personal		

Analysis

During the preflight inspection of the experimental amateur-built airplane, which had not been flown for nearly 1 year, the pilot drained the existing automotive fuel from the tank and replaced it with fresh fuel. After noting no anomalies during a ground run of the automotive-type engine, the pilot departed and circled above the departure field for several minutes to confirm that the engine would continue to perform normally before he departed the area. Several minutes later, the engine began to "hesitate," and, in response, the pilot "pumped" the throttle, which seemed to keep the engine partially running but with insufficient power to keep the airplane airborne. The pilot subsequently performed a forced landing to a farm field, during which the airplane incurred substantial damage to both lower wings. Postaccident examination of the airplane revealed no evidence of any preimpact mechanical failures of the engine; however, a sample of fuel taken from the airplane's fuel tank contained an unidentified particulate contaminant; however, it could not be determined whether this affected the engine performance. No other anomalies of the fuel system were noted.

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 for reasons that could not be determined during the postaccident investigation.

Findings

Not determined	(general) - Unknown/Not determined

Factual Information

History of Flight

Enroute-cruise	Loss of engine power (partial) (Defining event)

On May 20, 2012, about 1458 eastern daylight time, an experimental amateur-built Bel Aire 2000, N122BA, was substantially damaged when it impacted terrain during a forced landing following partial loss of engine power near Tyre, New York. The certificated commercial pilot incurred minor injuries. Visual meteorological conditions prevailed, and no flight plan was filed for the flight, which originated from a private field in Clyde, New York, and was destined for Finger Lakes Regional Airport (0G7), Seneca Falls, New York. The personal flight was conducted under the provisions of Title 14 Code of Federal Regulations Part 91.

According to the pilot, he purchased the airplane about 3 months prior to the accident flight, and the airplane had not been flown within the preceding year. The purpose of the flight was to relocate the airplane to his home in Florida, and the accident flight was to be the first leg of that trip.

On the morning of the flight, the pilot performed a preflight inspection of the airplane, which included draining the existing automotive fuel and replacing it with 35 gallons of fresh fuel. He then performed a ground run of the automotive engine and noted no anomalies. The pilot departed and circled above the departure field for several minutes in order to confirm that the engine would continue to perform normally before he departed the area. About 12 miles into the cruise portion of the flight, he noted that the engine began to "hesitate," and in response he began to "pump" the throttle, which seemed to keep the engine partially running. The pilot realized he would not be able to reach any nearby airports, and subsequently performed a forced landing to a farm field. The airplane incurred substantial damage to both lower wings during the landing.

The pilot held a commercial pilot certificate with ratings for airplane single and multi-engine land, and instrument airplane. He also held a flight instructor certificate with a rating for airplane single engine. He reported 3,001 total hours of flight experience, with one hour of experience in the accident airplane make and model.

Review of Federal Aviation Administration (FAA) airworthiness records revealed that the airplane was originally issued a special airworthiness certificate in the experimental amateur-built aircraft category on April 4, 1999. The required flight testing was completed on July 22, 2000, after the airplane had accumulated 68 total flight hours. The airplane was equipped with a General Motors V383-300 automotive engine and a 4-barrel automotive carburetor, which was rated to produce 330 horsepower. The airplane’s most recent condition inspection was completed on May 5, 2011, and at that time, the airframe had accumulated 184 total flight

hours. According to FAA inspectors, no flights had been undertaken between the last condition inspection and the accident flight.

Federal Aviation Administration inspectors examined the airplane at the accident scene, verified the quantity of fuel in the fuel tanks, and drained a sample of fuel from the lower fuel drain point. The sample of automotive fuel appeared to be contaminated with an undetermined particulate and was dark brown in color. Continuity of the fuel system was confirmed through the fuel filter and to the carburetor. Operation of the electric fuel pump was also confirmed.

After recovering the airplane from the accident site, the pilot conducted a detailed examination of the engine and carburetor and was unable to locate any anomalies with either component.

The weather conditions reported at Penn Yan Airport (PEO), Penn Yan, New York, at 1453, included clear skies, 10 statute miles visibility, calm winds, a temperature of 29 degrees Celsius (C), a dewpoint of 11 degrees C, and an altimeter setting of 30.12 inches of mercury.

Pilot Information

Certificate:	Commercial; Flight instructor	**Age:**	68,Male
Airplane Rating(s):	Single-engine land; Multi-engine land	**Seat Occupied:**	Front
Other Aircraft Rating(s):	None	**Restraint Used:**	
Instrument Rating(s):	Airplane	**Second Pilot Present:**	No
Instructor Rating(s):	Airplane single-engine	**Toxicology Performed:**	No
Medical Certification:	Class 2 With waivers/limitations	**Last FAA Medical Exam:**	January 5, 2012
Occupational Pilot:	No	**Last Flight Review or Equivalent:**	February 5, 2011
Flight Time:	3001 hours (Total, all aircraft), 1 hours (Total, this make and model), 2576 hours (Pilot In Command, all aircraft), 10 hours (Last 90 days, all aircraft), 5 hours (Last 30 days, all aircraft)		

Aircraft and Owner/Operator Information

Aircraft Make:	BELCHER, GERALD C	**Registration:**	N122BA
Model/Series:	BEL AIRE 2000	**Aircraft Category:**	Airplane
Year of Manufacture:		**Amateur Built:**	Yes
Airworthiness Certificate:	Experimental (Special)	**Serial Number:**	001
Landing Gear Type:	Tailwheel	**Seats:**	3
Date/Type of Last Inspection:	May 31, 2011 Condition	**Certified Max Gross Wt.:**	2881 lbs
Time Since Last Inspection:		**Engines:**	1 Reciprocating
Airframe Total Time:	184 Hrs as of last inspection	**Engine Manufacturer:**	General Motors
ELT:	Installed, not activated	**Engine Model/Series:**	V383-300
Registered Owner:	On file	**Rated Power:**	330 Horsepower
Operator:	On file	**Operating Certificate(s) Held:**	None

Meteorological Information and Flight Plan

Conditions at Accident Site:	Visual (VMC)	**Condition of Light:**	Day
Observation Facility, Elevation:	PEO,990 ft msl	**Distance from Accident Site:**	23 Nautical Miles
Observation Time:	18:53 Local	**Direction from Accident Site:**	210°
Lowest Cloud Condition:	Clear	**Visibility**	10 miles
Lowest Ceiling:	None	**Visibility (RVR):**	
Wind Speed/Gusts:	/	**Turbulence Type Forecast/Actual:**	/
Wind Direction:		**Turbulence Severity Forecast/Actual:**	/
Altimeter Setting:	30.19 inches Hg	**Temperature/Dew Point:**	29°C / 11°C
Precipitation and Obscuration:	No Obscuration; No Precipitation		
Departure Point:	Clyde, NY (NONE)	**Type of Flight Plan Filed:**	None
Destination:	Seneca Falls, NY (0G7)	**Type of Clearance:**	None
Departure Time:	14:45 Local	**Type of Airspace:**	

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:**	42.990276,-76.80194(est)

Administrative Information

Investigator In Charge (IIC):	Diaz, Dennis
Additional Participating Persons:	Chris Holliday; FAA/FSDO; Tyre, NY
Original Publish Date:	July 18, 2013
Last Revision Date:	
Investigation Class:	Class
Note:	
Investigation Docket:	https://data.ntsb.gov/Docket?ProjectID=83710