National Transportation Safety Board
Aviation Accident Preliminary Report

Location:	Hickory, NC	**Accident Number:**	ERA17FA001
Date & Time:	10/01/2016, 1310 EDT	**Registration:**	N4648V
Aircraft:	CULVER PQ 14A	**Injuries:**	1 Fatal
Flight Conducted Under:	Part 91: General Aviation - Personal		

On October 1, 2016, at 1310 eastern daylight time, a Culver PQ-14A, N4648V, was destroyed during collision with trees, terrain, and a commercial building during a forced landing after takeoff from Hickory Regional Airport (HKY), Hickory, North Carolina. The commercial pilot was fatally injured. Visual meteorological conditions prevailed, and no flight plan was filed for the personal flight conducted under the provisions of 14 Code of Federal Regulations Part 91.

Preliminary information from witnesses and the HKY air traffic control tower revealed the airplane's engine stopped producing power during taxi for takeoff. The pilot explained the delay to the controller, the engine was restarted, and the airplane departed.

Shortly after takeoff, the pilot reported the airplane was "having engine problems" and announced his intention to return to HKY. The controller provided the altimeter setting, the wind information, and cleared the airplane to land on "any runway."

Preliminary radar data revealed the airplane was about 2 miles south of HKY, when it reversed course in the direction of runway 01. The radar track ended in the vicinity of the accident site, approximately on the extended centerline of runway 01, and 1mile south of the approach end of the runway.

Witnesses on the ground described the engine sound as "sputtering" and "revving up and down." According to one witness, "I saw it come over the hill, it was sputtering, and then it would rev back up. The airplane would climb a little when the engine ran, and then it would descend when it sputtered." The airplane disappeared from view and the sounds of impact were heard.

The pilot held a commercial pilot certificate with a rating for airplane single engine land, multiengine land, and instrument airplane. His most recent Federal Aviation Administration (FAA) third-class medical certificate was issued October 2, 2014. He declared 2,462 total hours of flight experience on that date.

A review of the pilot's logbook revealed he had accumulated 2,478 total hours of flight experience, of which approximately 400 hours were in the accident airplane. He accrued 7.5

total hours of flight experience in the year previous to the accident, of which 3.5 hours were in the accident airplane.

According to FAA records, the airplane was manufactured in 1944 and it was primarily a wood and fabric structure. It was powered by a Franklin six-cylinder engine. Examination of maintenance records revealed its most recent annual inspection was completed November 12, 2015, at 744.4 total airframe hours.

At 1253, the weather reported at HKY included clear skies with 10 statute miles visibility. The wind was variable at 4 knots. The temperature was 23 degrees C, the dew point was 11 degrees C, and the altimeter setting was 30.09 inches of mercury.

The wreckage was examined at the accident site on October 2, 2016. There was a strong odor of automotive gasoline, and all major components were accounted for at the scene. The wreckage path was oriented 359 degrees magnetic and was about 100 feet in length. The initial impact point was in a tree about 35 feet above ground level and ground scars were visible in the pavement about 25 feet prior to where the airplane came to rest against a building.

The wreckage was fractured into three main sections; the engine and instrument panel, the wings and cabin floor structure, and the empennage with an intact tail section. All sections remained attached by cabling and wires.

Each wing contained three interconnected tanks that comprised the "main" fuel system. An auxiliary fuel tank was also installed. All six fuel tanks leaked fuel due to impact damage to the tanks and their connections. Continuity of the fuel lines was established from the tanks to the fuel selector, through the in-line auxiliary fuel pump, to the engine through several breaks. The fuel selector was in the "Main" position, and no blockages were found. All fuel drained from the airplane were consistent in odor and appearance of automotive gasoline.

Control continuity was established from the cockpit area to all flight control surfaces.

The propeller remained attached, and the blades were bent or fractured in an aft direction.

The engine was separated from the wreckage, and impact damage was noted to the No. 5 cylinder and the crankcase. The engine was rotated by hand, and continuity was established through the powertrain and the valvetrain to the accessory section. Compression was confirmed using the thumb method. The engine could not be rotated through 360 degrees due to a mechanical stop.

The crankcase cover was removed, and damage to the crankcase impinged upon the No. 5 cylinder which blocked the piston skirt and stopped rotation of the crankshaft. The internal engine components moved smoothly, were well lubricated, and showed no abnormal wear.

The engine-driven fuel pump was removed and pumped fuel when actuated with a drill. The hand-driven auxiliary "wobble" pump was actuated by hand and pumped fuel. All fuel screens were absent of debris. The carburetor was disassembled and the internal parts moved freely and were undamaged. The metal floats were intact. The carburetor bowl was absent of debris.

The left magneto was removed, actuated with a drill, and spark was produced at all terminal leads. The right magneto was impact damaged and the distributor was destroyed. The right magneto drive was actuated with a drill, and spark was produced at the secondary output of the ignition coil.

Aircraft and Owner/Operator Information

Aircraft Manufacturer:	CULVER	**Registration:**	N4648V
Model/Series:	PQ 14A NO SERIES	**Aircraft Category:**	Airplane
Amateur Built:	No		
Operator:	HARRIS GEORGE B	**Air Carrier Operating Certificate:**	None

Meteorological Information and Flight Plan

Observation Facility, Elevation:	HKY, 1189 ft msl	**Observation Time:**	1653 UTC
Lowest Cloud Condition:	Clear	**Conditions at Accident Site:**	Visual Conditions
Lowest Ceiling:	None	**Temperature/Dew Point:**	23°C / 11°C
Wind Speed/Gusts, Direction:	Light and Variable, Variable	**Visibility**	10 Miles
Altimeter Setting:	30.09 inches Hg	**Type of Flight Plan Filed:**	None
Departure Point:	Hickory, NC (HKY)	**Destination:**	Hickory, NC (HKY)

Wreckage and Impact Information

Crew Injuries:	1 Fatal	**Aircraft Damage:**	Destroyed
Passenger Injuries:	N/A	**Aircraft Fire:**	None
Ground Injuries:	N/A	**Aircraft Explosion:**	None
Total Injuries:	1 Fatal		

Administrative Information

Investigator In Charge (IIC):	Brian C Rayner
Additional Participating Persons:	Paul D Meyer; FAA/FSDO; Charlotte, NC
Note:	The NTSB traveled to the scene of this accident.