



# Aviation Investigation Final Report

---

<b>Location:</b>	Williamstown, New Jersey	<b>Accident Number:</b>	ERA10LA437
<b>Date &amp; Time:</b>	August 21, 2010, 12:10 Local	<b>Registration:</b>	N209RC
<b>Aircraft:</b>	Piper J3C-65	<b>Aircraft Damage:</b>	Substantial
<b>Defining Event:</b>	Loss of engine power (partial)	<b>Injuries:</b>	1 Minor
<b>Flight Conducted Under:</b>	Part 91: General aviation - Personal		

---

## Analysis

The airplane had not been flown recently so the pilot elected to conduct two preflight inspections, an engine run-up, and two full-power takeoff test runs where the airplane became momentarily airborne with no discrepancies noted. During the accident flight takeoff, the airplane accelerated and became airborne at the same point along the runway as it had during the two test runs. While climbing out on the runway heading, the pilot noticed that the engine was suddenly no longer developing full takeoff power. He decided that the airplane was too far down the runway to abort the takeoff and continued the forward flight path. The airplane cleared powerlines at the departure end of the runway and the pilot maneuvered to perform a forced landing in an adjacent field. The airplane then collided with the tops of trees and impacted an unoccupied parked car. A postaccident inspection of the engine revealed weak spark from both spark plugs of the No. 1 cylinder, and the bottom plugs in the remaining cylinders were oil soaked and exhibited weak spark. The cylinders were replaced about 4 years prior to the accident equating to 6 flight hours.

## Probable Cause and Findings

The National Transportation Safety Board determines the probable cause(s) of this accident to be: The partial loss of engine power during takeoff due to weak spark plugs on the No. 1 cylinder.

## Findings

---

**Aircraft**

Spark plugs/igniters - Malfunction

## Factual Information

### History of Flight

<b>Initial climb</b>	Loss of engine power (partial) (Defining event)
<b>Emergency descent</b>	Off-field or emergency landing
<b>Emergency descent</b>	Collision with terr/obj (non-CFIT)

On August 21, 2010, about 1210 eastern daylight time, a Piper J3C-65, N209RC, registered to a private individual, sustained substantial damage when it struck a parked car during a forced landing shortly after takeoff from Southern Cross Airport, Williamstown, New Jersey. Visual meteorological conditions prevailed and no flight plan was filed for the personal flight conducted under the provisions of 14 Code of Federal Regulations (CFR) Part 91. The private pilot, who was the sole occupant, sustained minor injury. There were no occupants inside the car which was parked adjacent to a house. The flight was originating at the time of the accident.

The pilot stated that since the airplane had not been flown recently, he conducted two preflight inspections, an engine run-up, and two full-power takeoff test runs becoming airborne briefly with no discrepancies noted.

After the two test takeoff runs, the pilot taxied to the approach end of runway 27, and slowly advanced full throttle to takeoff. The airplane accelerated and became airborne at the same point along the runway it had during the two test runs. During the initial climbout while flying the runway heading, the pilot noticed that the engine was suddenly no longer developing full takeoff power and performed a quick scan of the cockpit to ensure that the fuel selector was on, the carburetor heat was off, and the throttle was full forward. As the airspeed began to decrease along with the altitude, the pilot was not sure if the airplane would clear powerlines at the departure end of the runway. Since he was too far down the runway to abort, he continued to fly, cleared the powerlines, and maneuvered the airplane for a forced landing in an adjacent field. The airplane then clipped the tops of trees, and impacted an unoccupied parked car. After impact, the pilot exited the airplane and waited for rescue services.

Postaccident examination of the airplane and engine by an FAA inspector revealed that the fuel tank was nearly full of 100 low lead fuel and no contaminants were noted in the fuel tank or fuel strainer. The carburetor, which was separated at impact, was inspected and no discrepancies were noted. Examination of the engine revealed crankshaft, camshaft, and valve train continuity, and compression testing of all cylinders revealed no discrepancies. No ferrous particles were noted in the engine oil. Operational testing of the spark plugs was performed using 80 psi as a reference. A weak spark from both plugs of the No. 1 cylinder was noted during testing. The lower plugs of the remaining cylinders which were found oil soaked, and tested below the normal range. The FAA inspector also reported that the cylinders were last

replaced in 2006, and at the time of the accident the engine had only accumulated approximately 6 hours since the cylinders were replaced.

### Pilot Information

<b>Certificate:</b>	Private	<b>Age:</b>	61, Male
<b>Airplane Rating(s):</b>	Single-engine land	<b>Seat Occupied:</b>	Rear
<b>Other Aircraft Rating(s):</b>	None	<b>Restraint Used:</b>	
<b>Instrument Rating(s):</b>	Airplane	<b>Second Pilot Present:</b>	No
<b>Instructor Rating(s):</b>	None	<b>Toxicology Performed:</b>	No
<b>Medical Certification:</b>	None None	<b>Last FAA Medical Exam:</b>	
<b>Occupational Pilot:</b>	No	<b>Last Flight Review or Equivalent:</b>	October 12, 2009
<b>Flight Time:</b>	2021 hours (Total, all aircraft), 45 hours (Total, this make and model), 1881 hours (Pilot In Command, all aircraft)		

### Aircraft and Owner/Operator Information

<b>Aircraft Make:</b>	Piper	<b>Registration:</b>	N209RC
<b>Model/Series:</b>	J3C-65	<b>Aircraft Category:</b>	Airplane
<b>Year of Manufacture:</b>		<b>Amateur Built:</b>	
<b>Airworthiness Certificate:</b>	Normal	<b>Serial Number:</b>	6460
<b>Landing Gear Type:</b>	Tailwheel	<b>Seats:</b>	2
<b>Date/Type of Last Inspection:</b>	April 21, 2010 Annual	<b>Certified Max Gross Wt.:</b>	1100 lbs
<b>Time Since Last Inspection:</b>		<b>Engines:</b>	1 Reciprocating
<b>Airframe Total Time:</b>	702 Hrs	<b>Engine Manufacturer:</b>	Continental
<b>ELT:</b>	Installed, not activated	<b>Engine Model/Series:</b>	A65
<b>Registered Owner:</b>	CAPECE RICHARD N	<b>Rated Power:</b>	65 Horsepower
<b>Operator:</b>	CAPECE RICHARD N	<b>Operating Certificate(s) Held:</b>	None

## Meteorological Information and Flight Plan

<b>Conditions at Accident Site:</b>	Visual (VMC)	<b>Condition of Light:</b>	Day
<b>Observation Facility, Elevation:</b>	PHL,36 ft msl	<b>Distance from Accident Site:</b>	17 Nautical Miles
<b>Observation Time:</b>	11:54 Local	<b>Direction from Accident Site:</b>	321°
<b>Lowest Cloud Condition:</b>		<b>Visibility</b>	10 miles
<b>Lowest Ceiling:</b>	Broken / 5000 ft AGL	<b>Visibility (RVR):</b>	
<b>Wind Speed/Gusts:</b>	3 knots /	<b>Turbulence Type Forecast/Actual:</b>	/
<b>Wind Direction:</b>		<b>Turbulence Severity Forecast/Actual:</b>	/
<b>Altimeter Setting:</b>	30.04 inches Hg	<b>Temperature/Dew Point:</b>	28°C / 17°C
<b>Precipitation and Obscuration:</b>	No Obscuration; No Precipitation		
<b>Departure Point:</b>	Williamstown, NJ (C01)	<b>Type of Flight Plan Filed:</b>	None
<b>Destination:</b>	Williamstown, NJ (C01)	<b>Type of Clearance:</b>	None
<b>Departure Time:</b>	12:05 Local	<b>Type of Airspace:</b>	

## Airport Information

<b>Airport:</b>	Southern Cross Airport C01	<b>Runway Surface Type:</b>	
<b>Airport Elevation:</b>	145 ft msl	<b>Runway Surface Condition:</b>	
<b>Runway Used:</b>		<b>IFR Approach:</b>	None
<b>Runway Length/Width:</b>		<b>VFR Approach/Landing:</b>	Forced landing

## Wreckage and Impact Information

<b>Crew Injuries:</b>	1 Minor	<b>Aircraft Damage:</b>	Substantial
<b>Passenger Injuries:</b>		<b>Aircraft Fire:</b>	None
<b>Ground Injuries:</b>	N/A	<b>Aircraft Explosion:</b>	None
<b>Total Injuries:</b>	1 Minor	<b>Latitude, Longitude:</b>	39.655555,-75.014442(est)

## Administrative Information

<b>Investigator In Charge (IIC):</b>	Monville, Timothy
<b>Additional Participating Persons:</b>	Orton Ogborn; FAA/FSDO; Philadelphia, PA
<b>Original Publish Date:</b>	June 13, 2011
<b>Last Revision Date:</b>	
<b>Investigation Class:</b>	<a href="#">Class</a>
<b>Note:</b>	
<b>Investigation Docket:</b>	<a href="https://data.nts.gov/Docket?ProjectID=77042">https://data.nts.gov/Docket?ProjectID=77042</a>

The National Transportation Safety Board (NTSB) is an independent federal agency charged by Congress with investigating every civil aviation accident in the United States and significant events in other modes of transportation—railroad, transit, highway, marine, pipeline, and commercial space. We determine the probable causes of the accidents and events we investigate, and issue safety recommendations aimed at preventing future occurrences. In addition, we conduct transportation safety research studies and offer information and other assistance to family members and survivors for each accident or event we investigate. We also serve as the appellate authority for enforcement actions involving aviation and mariner certificates issued by the Federal Aviation Administration (FAA) and US Coast Guard, and we adjudicate appeals of civil penalty actions taken by the FAA.

The NTSB does not assign fault or blame for an accident or incident; rather, as specified by NTSB regulation, “accident/incident investigations are fact-finding proceedings with no formal issues and no adverse parties ... and are not conducted for the purpose of determining the rights or liabilities of any person” (Title 49 *Code of Federal Regulations* section 831.4). Assignment of fault or legal liability is not relevant to the NTSB’s statutory mission to improve transportation safety by investigating accidents and incidents and issuing safety recommendations. In addition, statutory language prohibits the admission into evidence or use of any part of an NTSB report related to an accident in a civil action for damages resulting from a matter mentioned in the report (Title 49 *United States Code* section 1154(b)). A factual report that may be admissible under 49 *United States Code* section 1154(b) is available [here](#).