National Transportation Safety Board
Aviation Accident Final Report

Location:	Rosemount, MN	**Accident Number:**	CEN10LA002
Date & Time:	10/03/2009, 1547 CDT	**Registration:**	N70585
Aircraft:	PIPER J3C-65	**Aircraft Damage:**	Substantial
Defining Event:	Loss of engine power (partial)	**Injuries:**	1 Serious, 1 Minor
Flight Conducted Under:	Part 91: General Aviation - Personal		

Analysis

The pilot reported that he started the engine and waited for about 10 minutes for the oil temperature to rise before he departed from a grass airstrip. During takeoff, he reported that the airplane “felt slow.” He turned the carburetor heat on, but the engine lost partial power and the airplane "started to sink." He banked to the left to avoid trees. He reported losing altitude, and then the airplane experienced a “stall spin to the left,” impacting a mature corn field. Postaccident inspection of the engine and airframe revealed no preexisting anomalies that would preclude normal operation of the airplane. The observed temperature was 11 degrees Celsius (C) and the dew point was 6 degrees C. The Transport Canada Carburetor Icing chart indicated that at the observed weather conditions the engine was susceptible to “Serious Icing – Any Power.”

Probable Cause and Findings

The National Transportation Safety Board determines the probable cause(s) of this accident to be: The pilot's delayed use of carburetor heat while operating in conditions conducive to carburetor icing.

Findings

Aircraft	Engine controls - Incorrect use/operation (Cause)
Personnel issues	Delayed action - Pilot (Cause) Use of equip/system - Pilot
Environmental issues	Conducive to carburetor icing - Effect on operation (Cause)

Factual Information

On October 3, 2009, at 1547 central daylight time, a Piper J3C-65, N70585, sustained substantial damage when it impacted terrain after a loss of engine power after takeoff from a grass airfield in Rosemount, Minnesota. The pilot received minor injuries and the front seat passenger received serious injuries. The 14 Code of Federal Regulations Part 91 personal flight was departing from Jensen Airfield, a private grass airstrip, on a local flight. Visual meteorological conditions prevailed and no flight plan was filed.

The pilot reported that there was a fly-in at the private airstrip and he decided to take a friend for a flight "around the patch." After he preflighted the airplane, he started the engine and waited for about 10 minutes for the oil temperature to rise. He taxied out and did a run-up prior to departure. During takeoff, he added power slowly to full power, got the tail up, and slowly rotated. He reported that the airplane "felt slow." He tried to land, but he was too fast and there was "not enough room." He pulled the carburetor heat on, but the engine lost partial power and the airplane "started to sink." He banked to the left to avoid trees. He reported losing altitude, and then the airplane experienced a "stall spin to the left." The airplane impacted a mature corn field. The pilot shut off the airplane's magnetos and fuel, and exited the airplane with the passenger.

A Federal Aviation Administration airworthiness inspector examined the airplane. The inspection revealed that the magnetos and fuel selector were turned off. The fuel tank was ruptured. The primer was in and locked. The carburetor heat was out (on). The propeller was bent aft. The airplane was equipped with a seat belt and shoulder harness for the rear seat. The front seat was equipped with a seat belt, but no shoulder harness, although there was a hard attachment point for a shoulder harness. The flight controls exhibited cable continuity to the ailerons, elevator, and rudder.

The inspection of the 65-horsepower Continental A-65-8 engine revealed that the carburetor was broken in half, top to bottom. The carburetor air box was crushed from impact forces. The spark plugs were clean and clear. The left and right magnetos produced spark. The engine was rotated and it exhibited continuity in the drive train, and there was compression on all four cylinders.

At 1553, the observed weather at the Minneapolis-St Paul International Airport (MSP), located about 12 miles northwest of the accident site, was: Wind 320 degrees at 7 knots, visibility 10 miles, few clouds at 2,100 feet, broken ceiling at 3,400 feet, temperature 11 degrees Celsius (C), dew point 6 degrees C, altimeter 29.81 inches of Mercury.

The Transport Canada Carburetor Icing chart indicated that "Serious Icing – Any Power" conditions existed with a temperature of 11 degrees C and a temperature dew point of 6 degrees C.

History of Flight

Takeoff	Fuel related Loss of engine power (partial) (Defining event) Loss of control in flight
Uncontrolled descent	Collision with terr/obj (non-CFIT)

Pilot Information

Certificate:	Airline Transport; Commercial	**Age:**	35, Male
Airplane Rating(s):	Multi-engine Land; Single-engine Land	**Seat Occupied:**	Rear
Other Aircraft Rating(s):	None	**Restraint Used:**	Seatbelt, Shoulder harness
Instrument Rating(s):	Airplane	**Second Pilot Present:**	No
Instructor Rating(s):	None	**Toxicology Performed:**	No
Medical Certification:	Class 1 None	**Last Medical Exam:**	02/23/2009
Occupational Pilot:	Yes	**Last Flight Review or Equivalent:**	07/01/2009
Flight Time:	2120 hours (Total, all aircraft), 60 hours (Total, this make and model), 14 hours (Last 90 days, all aircraft)		

Aircraft and Owner/Operator Information

Aircraft Manufacturer:	PIPER	**Registration:**	N70585
Model/Series:	J3C-65	**Aircraft Category:**	Airplane
Year of Manufacture:		**Amateur Built:**	No
Airworthiness Certificate:	Normal	**Serial Number:**	17594
Landing Gear Type:	Tailwheel	**Seats:**	2
Date/Type of Last Inspection:	05/07/2009, Annual	**Certified Max Gross Wt.:**	1220 lbs
Time Since Last Inspection:		**Engines:**	1 Reciprocating
Airframe Total Time:	2068 Hours	**Engine Manufacturer:**	Continental
ELT:	Installed, not activated	**Engine Model/Series:**	A-65-8
Registered Owner:	BRIAN B DOYLE	**Rated Power:**	65 hp
Operator:	BRIAN B DOYLE	**Air Carrier Operating Certificate:**	None

Meteorological Information and Flight Plan

Observation Facility, Elevation:	MSP, 841 ft msl	**Observation Time:**	1553 CDT
Distance from Accident Site:	12 Nautical Miles	**Condition of Light:**	Day
Direction from Accident Site:	320°	**Conditions at Accident Site:**	Visual Conditions
Lowest Cloud Condition:	Few / 2100 ft agl	**Temperature/Dew Point:**	11°C / 6°C
Lowest Ceiling:	Broken / 3400 ft agl	**Visibility**	10 Miles
Wind Speed/Gusts, Direction:	7 knots, 330°	**Visibility (RVR):**	
Altimeter Setting:	29.81 inches Hg	**Visibility (RVV):**	
Precipitation and Obscuration:			
Departure Point:	Rosemount, MN	**Type of Flight Plan Filed:**	None
Destination:	Rosemount, MN	**Type of Clearance:**	None
Departure Time:	1545 CDT	**Type of Airspace:**	

Airport Information

Airport:	Jensen Airfield	**Runway Surface Type:**	
Airport Elevation:		**Runway Surface Condition:**	
Runway Used:	N/A	**IFR Approach:**	None
Runway Length/Width:		**VFR Approach/Landing:**	None

Wreckage and Impact Information

Crew Injuries:	1 Minor	**Aircraft Damage:**	Substantial
Passenger Injuries:	1 Serious	**Aircraft Fire:**	None
Ground Injuries:	N/A	**Aircraft Explosion:**	None
Total Injuries:	1 Serious, 1 Minor		

Administrative Information

Investigator In Charge (IIC):	James P Silliman	**Adopted Date:**	05/28/2010
Additional Participating Persons:	Barry Johnson; FAA-Minneapolis FSDO; Minneapolis, MN		
Publish Date:	05/26/2010		
Investigation Docket:	http://dms.ntsb.gov/pubdms/search/dockList.cfm?mKey=74849		