Aviation Investigation Final Report

Location:	SHERWOOD, North Dakota	**Accident Number:**	CHI00LA109
Date & Time:	April 11, 2000, 18:00 Local	**Registration:**	N5548B
Aircraft:	Piper PA-11	**Aircraft Damage:**	Substantial
Defining Event:		**Injuries:**	1 None
Flight Conducted Under:	Part 91: General aviation - Personal		

Analysis

The student pilot said that he was flying over his home to look for an area on which to put in an airstrip. 'When I was making an approach at one location, I added power to the plane and there was no power.' The pilot said he checked the carburetor heat and it was on. The pilot elected to set the airplane down on the field. 'As the plane was slowing down, the wheels dropped through the snow and the plane flipped on its back.' Examination of the airplane revealed no anomalies. The temperature and dew point reported at Minot International Airport, Minot, North Dakota (212 degrees and 51 nautical miles from the accident site) were 37 degrees Fahrenheit (F), and 19 degrees F. According to the DOT/FAA Publication CT- 82/44, Light Airplane Piston Engine Carburetor Ice Detector/Warning Device Sensitivity/Effectiveness, June 1982, with a temperature of 37 degrees F, and a dew point of 19 degrees F, the Carburetor Icing Probability Chart shows icing occurring at glide and cruise power.

Probable Cause and Findings

The National Transportation Safety Board determines the probable cause(s) of this accident to be: carburetor ice and the pilot's improper decisions when to use carburetor heat and to perform a soft field landing. Factors relating to this accident were the improper use of carburetor heat, the soft field landing attempt, and the snow covered field.

Findings

Occurrence #1: LOSS OF ENGINE POWER
Phase of Operation: MANEUVERING

Findings
1. (C) FUEL SYSTEM,CARBURETOR - ICE
2. (F) CARBURETOR HEAT - IMPROPER USE OF - PILOT IN COMMAND
3. (C) IN-FLIGHT PLANNING/DECISION - INADEQUATE - PILOT IN COMMAND

Occurrence #2: IN FLIGHT COLLISION WITH TERRAIN/WATER
Phase of Operation: EMERGENCY DESCENT/LANDING

Findings
4. (F) SOFT FIELD LANDING/PROCEDURE - ATTEMPTED - PILOT IN COMMAND
5. (F) TERRAIN CONDITION - SNOW COVERED

Factual Information

On April 11, 2000, at 1800 central daylight time (cdt), a Piper PA-11, N5548B, operated by a solo student pilot, sustained substantial damage when while maneuvering at low altitude and attempting to go around, the airplane impacted into a snow- covered field and subsequently nosed over, 4 miles east of Sherwood, North Dakota. Visual meteorological conditions prevailed at the time of the accident. The personal flight was being conducted under 14 CFR Part 91. There was no flight plan on file. The student pilot reported no injuries. The local flight originated at Westhope, North Dakota, at 1745 cdt.

In his written statement, the student pilot said that he was flying over his home to look for an area on which to put in an airstrip. "When I was making an approach at one location, I added power to the plane and there was no power." The pilot said he checked the carburetor heat and it was on. The pilot elected to set the airplane down on the field. "As the plane was slowing down, the wheels dropped through the snow and the plane flipped on its back."

A Federal Aviation Administration (FAA) inspector examined the airplane at the student pilot's farm. The engine, engine mounts and firewall were bent upward and aft. The propeller was bent aft. The right wing was bent upward. Both wing struts were broken. The vertical stabilizer and rudder were crushed downward. Examination of the airplane's engine, engine controls and other airplane systems revealed no anomalies.

At 1748 cdt, the weather conditions reported at Minot International Airport, Minot, North Dakota (212 degrees and 51 nautical miles from the accident site) were 15,000 feet broken ceiling, 15 miles visibility, temperature 37 degrees Fahrenheit (F), dew point 19 degrees F, winds 310 degrees at 7 knots, and altimeter setting of 30.38 inches of Mercury.

According to the Department of Transportation/FAA Publication CT- 82/44, Light Airplane Piston Engine Carburetor Ice Detector/ Warning Device Sensitivity/Effectiveness, June 1982, with a temperature of 37 degrees F, and a dew point of 19 degrees F, the Carburetor Icing Probability Chart shows icing occurring at glide and cruise power.

Pilot Information

Certificate:	Student	**Age:**	49,Male
Airplane Rating(s):	None	**Seat Occupied:**	Front
Other Aircraft Rating(s):	None	**Restraint Used:**	
Instrument Rating(s):	None	**Second Pilot Present:**	No
Instructor Rating(s):	None	**Toxicology Performed:**	No
Medical Certification:	Class 3 Valid Medical--w/ waivers/lim	**Last FAA Medical Exam:**	February 24, 2000
Occupational Pilot:	No	**Last Flight Review or Equivalent:**	
Flight Time:	28 hours (Total, all aircraft), 28 hours (Total, this make and model), 28 hours (Last 90 days, all aircraft), 15 hours (Last 30 days, all aircraft), 4 hours (Last 24 hours, all aircraft)		

Aircraft and Owner/Operator Information

Aircraft Make:	Piper	**Registration:**	N5548B
Model/Series:	PA-11 PA-11	**Aircraft Category:**	Airplane
Year of Manufacture:		**Amateur Built:**	
Airworthiness Certificate:	Normal	**Serial Number:**	11-1053
Landing Gear Type:	Tailwheel	**Seats:**	2
Date/Type of Last Inspection:	February 9, 2000 Annual	**Certified Max Gross Wt.:**	1200 lbs
Time Since Last Inspection:	20 Hrs	**Engines:**	1 Reciprocating
Airframe Total Time:	1482 Hrs	**Engine Manufacturer:**	Continental
ELT:	Installed, not activated	**Engine Model/Series:**	C-90
Registered Owner:	ARLYN KEITH	**Rated Power:**	90 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:	MOT ,1715 ft msl	**Distance from Accident Site:**	42 Nautical Miles
Observation Time:	17:48 Local	**Direction from Accident Site:**	158°
Lowest Cloud Condition:	Unknown	**Visibility**	15 miles
Lowest Ceiling:	Broken / 15000 ft AGL	**Visibility (RVR):**	
Wind Speed/Gusts:	7 knots /	**Turbulence Type Forecast/Actual:**	/
Wind Direction:	310°	**Turbulence Severity Forecast/Actual:**	/
Altimeter Setting:	30 inches Hg	**Temperature/Dew Point:**	3°C / -7°C
Precipitation and Obscuration:	No Obscuration; No Precipitation		
Departure Point:	WESTHOPE , ND (D64)	**Type of Flight Plan Filed:**	None
Destination:		**Type of Clearance:**	None
Departure Time:	16:30 Local	**Type of Airspace:**	Class E

Airport Information

Airport:		**Runway Surface Type:**	
Airport Elevation:		**Runway Surface Condition:**	
Runway Used:	0	**IFR Approach:**	None
Runway Length/Width:		**VFR Approach/Landing:**	None

Wreckage and Impact Information

Crew Injuries:	1 None	**Aircraft Damage:**	Substantial
Passenger Injuries:		**Aircraft Fire:**	None
Ground Injuries:	N/A	**Aircraft Explosion:**	None
Total Injuries:	1 None	**Latitude, Longitude:**	48.960369,-101.630012(est)

Administrative Information

Investigator In Charge (IIC):	Bowling, David
Additional Participating Persons:	KARMEN JOHNSON; FARGO , ND
Original Publish Date:	May 17, 2001
Last Revision Date:	
Investigation Class:	Class
Note:	The NTSB traveled to the scene of this accident.
Investigation Docket:	https://data.ntsb.gov/Docket?ProjectID=48987