



# Aviation Investigation Final Report

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<b>Location:</b>	Fryeburg, Maine	<b>Accident Number:</b>	NYC03LA055
<b>Date &amp; Time:</b>	February 16, 2003, 14:30 Local	<b>Registration:</b>	N76897
<b>Aircraft:</b>	Cessna 140	<b>Aircraft Damage:</b>	Substantial
<b>Defining Event:</b>		<b>Injuries:</b>	2 None
<b>Flight Conducted Under:</b>	Part 91: General aviation - Instructional		

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## Analysis

During an instructional flight, about 2,500 feet msl, the CFI applied carburetor heat and set the engine power to idle for a simulated engine failure. The private pilot completed the emergency checklist items, and positioned the airplane for a simulated forced landing to a field. During the descent, the carburetor heat remained on, and the CFI occasionally cycled the throttle to clear the engine. About 15-20 feet above the field, the pilot attempted to add power for a go-around, but the engine did not respond. The CFI then took control of the airplane, and performed a forced landing to the field. A certificated mechanic examined the wreckage after the accident. The mechanic was able to rotate the propeller by hand, and did not note any discrepancies with the engine. He also observed adequate fuel in the airplane. The mechanic further stated that he believed the power loss occurred due to carburetor ice. On the make and model accident engine, the carburetor was situated below the engine, and more susceptible to carburetor ice. In addition, the carburetor heat relied on two cylinders, rather than all four. The mechanic was confident that carburetor ice caused the power loss, and did not attempt to disassemble the carburetor to look for ice. A Federal Aviation Administration inspector stated that she did not examine the wreckage, but the certificated mechanic had determined the power loss was due to carburetor ice.

## Probable Cause and Findings

The National Transportation Safety Board determines the probable cause(s) of this accident to be: An in-flight encounter with carburetor ice, which resulted in a total loss of engine power during a simulated engine failure.

## Findings

Occurrence #1: LOSS OF ENGINE POWER(TOTAL) - NONMECHANICAL

Phase of Operation: APPROACH

Findings

1. (C) WEATHER CONDITION - CARBURETOR ICING CONDITIONS
2. FUEL SYSTEM,CARBURETOR - ICE

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Occurrence #2: FORCED LANDING

Phase of Operation: DESCENT - EMERGENCY

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Occurrence #3: IN FLIGHT COLLISION WITH TERRAIN/WATER

Phase of Operation: EMERGENCY DESCENT/LANDING

Findings

3. TERRAIN CONDITION - SNOWBANK

## Factual Information

On February 16, 2003, about 1430 eastern standard time, a Cessna 140, N76897, was substantially damaged during a forced landing to a field near Fryeburg, Maine. The certified flight instructor (CFI) and the private pilot were not injured. Visual meteorological conditions prevailed for the flight that departed Eastern Slopes Regional Airport (IZG), Fryeburg, Maine, about 1400. No flight plan was filed for the local instructional flight conducted under 14 CFR Part 91.

The private pilot stated that he had recently purchased the airplane, and was receiving flight instruction. The private pilot completed some maneuvers at an altitude of 2,500-3,000 feet msl, and about 1430, the CFI applied carburetor heat while setting the engine power to idle for a simulated engine failure.

The private pilot completed the emergency checklist items, and positioned the airplane for a simulated forced landing to a field. During the descent, the carburetor heat remained on, and the CFI occasionally cycled the throttle to "clear the engine."

About 15-20 feet above the field, the pilot attempted to add power for a go-around, but the engine did not respond. The CFI then took control of the airplane, and performed a forced landing to the field. During the landing, the airplane struck a snow bank and came to rest inverted. The airplane sustained damage to the gearbox, fuselage, wings, and vertical stabilizer.

A certificated mechanic examined the wreckage after the accident. The mechanic was able to rotate the propeller by hand, and did not note any discrepancies with the engine. He also observed fuel in the airplane. The mechanic further stated that he believed the power loss occurred due to carburetor ice. He added that on the make and model accident engine, the carburetor was situated below the engine, and more susceptible to carburetor ice. In addition, the carburetor heat relied on two cylinders, rather than all four. The mechanic was confident that carburetor ice caused the power loss, and did not attempt to disassemble the carburetor to look for ice.

A Federal Aviation Administration inspector stated that she did not examine the wreckage, but the certificated mechanic had determined the power loss was due to carburetor ice.

The reported temperature at an airport approximately 30 miles southeast of the accident site, at 1451, was 16 degrees F. The reported dew point was -16 degrees F, which yielded a relative humidity of 22 percent.

According to DOT/FAA/CT-82/44 Publication, Carburetor Icing Probability Chart, the engine

was not susceptible to carburetor ice under those conditions.

### Flight instructor Information

<b>Certificate:</b>	Commercial	<b>Age:</b>	50, Male
<b>Airplane Rating(s):</b>	Single-engine land; Multi-engine land	<b>Seat Occupied:</b>	Right
<b>Other Aircraft Rating(s):</b>	None	<b>Restraint Used:</b>	
<b>Instrument Rating(s):</b>	Airplane	<b>Second Pilot Present:</b>	Yes
<b>Instructor Rating(s):</b>	Airplane single-engine	<b>Toxicology Performed:</b>	No
<b>Medical Certification:</b>	Class 2 Valid Medical--w/ waivers/lim	<b>Last FAA Medical Exam:</b>	April 23, 2002
<b>Occupational Pilot:</b>	UNK	<b>Last Flight Review or Equivalent:</b>	August 8, 2002
<b>Flight Time:</b>	2732 hours (Total, all aircraft), 7 hours (Total, this make and model), 2608 hours (Pilot In Command, all aircraft), 47 hours (Last 90 days, all aircraft), 15 hours (Last 30 days, all aircraft), 0 hours (Last 24 hours, all aircraft)		

### Pilot Information

<b>Certificate:</b>	Private	<b>Age:</b>	49, Male
<b>Airplane Rating(s):</b>	Single-engine land	<b>Seat Occupied:</b>	Left
<b>Other Aircraft Rating(s):</b>	None	<b>Restraint Used:</b>	
<b>Instrument Rating(s):</b>	Airplane	<b>Second Pilot Present:</b>	Yes
<b>Instructor Rating(s):</b>	None	<b>Toxicology Performed:</b>	No
<b>Medical Certification:</b>	Class 3 Valid Medical--no waivers/lim.	<b>Last FAA Medical Exam:</b>	May 29, 2001
<b>Occupational Pilot:</b>	No	<b>Last Flight Review or Equivalent:</b>	April 20, 2001
<b>Flight Time:</b>	744 hours (Total, all aircraft), 6 hours (Total, this make and model), 650 hours (Pilot In Command, all aircraft), 19 hours (Last 90 days, all aircraft), 13 hours (Last 30 days, all aircraft), 0 hours (Last 24 hours, all aircraft)		

## Aircraft and Owner/Operator Information

<b>Aircraft Make:</b>	Cessna	<b>Registration:</b>	N76897
<b>Model/Series:</b>	140	<b>Aircraft Category:</b>	Airplane
<b>Year of Manufacture:</b>		<b>Amateur Built:</b>	
<b>Airworthiness Certificate:</b>	Normal	<b>Serial Number:</b>	11331
<b>Landing Gear Type:</b>	Tailwheel	<b>Seats:</b>	2
<b>Date/Type of Last Inspection:</b>	February 1, 2003 AAIP	<b>Certified Max Gross Wt.:</b>	1450 lbs
<b>Time Since Last Inspection:</b>	8 Hrs	<b>Engines:</b>	1 Reciprocating
<b>Airframe Total Time:</b>	1430 Hrs at time of accident	<b>Engine Manufacturer:</b>	Continental
<b>ELT:</b>	Installed, activated, did not aid in locating accident	<b>Engine Model/Series:</b>	C85
<b>Registered Owner:</b>	Green Thumb Farms	<b>Rated Power:</b>	85 Horsepower
<b>Operator:</b>	Don Thibodwau	<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>	PWM,74 ft msl	<b>Distance from Accident Site:</b>	30 Nautical Miles
<b>Observation Time:</b>	14:51 Local	<b>Direction from Accident Site:</b>	150°
<b>Lowest Cloud Condition:</b>	Clear	<b>Visibility</b>	10 miles
<b>Lowest Ceiling:</b>	None	<b>Visibility (RVR):</b>	
<b>Wind Speed/Gusts:</b>	9 knots /	<b>Turbulence Type Forecast/Actual:</b>	/
<b>Wind Direction:</b>	310°	<b>Turbulence Severity Forecast/Actual:</b>	/
<b>Altimeter Setting:</b>	30.63 inches Hg	<b>Temperature/Dew Point:</b>	-9°C / -27°C
<b>Precipitation and Obscuration:</b>	No Obscuration; No Precipitation		
<b>Departure Point:</b>	Fryeburg, ME (IZG )	<b>Type of Flight Plan Filed:</b>	None
<b>Destination:</b>		<b>Type of Clearance:</b>	None
<b>Departure Time:</b>	14:00 Local	<b>Type of Airspace:</b>	Class G

## Airport Information

<b>Airport:</b>	Eastern Slopes Regional Airpor IZG	<b>Runway Surface Type:</b>	Snow
<b>Airport Elevation:</b>	454 ft msl	<b>Runway Surface Condition:</b>	Snow
<b>Runway Used:</b>		<b>IFR Approach:</b>	None
<b>Runway Length/Width:</b>		<b>VFR Approach/Landing:</b>	Forced landing;Simulated forced landing

## Wreckage and Impact Information

<b>Crew Injuries:</b>	2 None	<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>	2 None	<b>Latitude, Longitude:</b>	43.991111,-70.947776

## Administrative Information

<b>Investigator In Charge (IIC):</b>	Gretz, Robert
<b>Additional Participating Persons:</b>	Sandy Taylor; FAA FSDO-05; Portland, ME
<b>Original Publish Date:</b>	November 25, 2003
<b>Last Revision Date:</b>	
<b>Investigation Class:</b>	<a href="#">Class</a>
<b>Note:</b>	
<b>Investigation Docket:</b>	<a href="https://data.ntsb.gov/Docket?ProjectID=56538">https://data.ntsb.gov/Docket?ProjectID=56538</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](#).