National Transportation Safety Board
Aviation Accident Final Report

Location:	Keene, NH	**Accident Number:**	GAA16CA377
Date & Time:	07/07/2016, 1200 EDT	**Registration:**	N190ND
Aircraft:	PIPER PA 44	**Aircraft Damage:**	Substantial
Defining Event:	Landing area undershoot	**Injuries:**	2 None
Flight Conducted Under:	Part 91: General Aviation - Instructional		

Analysis

The flight instructor in the multiengine airplane reported that, during a simulated single-engine instrument approach to runway 2, the right engine was configured for the simulated failure. The instructor added that the goal was to perform a missed approach on one engine and note the airplane's performance. The pilot under instruction descended to the decision height and executed the missed approach procedure, but the airplane would not climb. The flight instructor told the pilot to go to full power on both engines. According to the flight instructor, "mixtures, props and throttles were all full forward and the fuel flow levers were both at the ON position," and he took control of the airplane.

The flight instructor reported that there were trees and buildings to the north and that he made a left turn about 400 ft above ground level with the intent to land on runway 14. He extended the landing gear but realized that he would not reach the runway. He executed a forced landing to the southwest on taxiway Sierra, the airplane crossed over runway 32/14, and although heavy braking was applied, the airplane exited the taxiway and impacted a drainage culvert. The airplane sustained substantial damage to the aft fuselage stringers and longerons.

The airport elevation was 488 ft, the density altitude was 2,120 ft, the temperature was 81°, the dew point was 66° F, and the wind was calm, and the flight instructor stated that carburetor heat was not used during the approach on either engine.

The relative humidity was about 60 percent, and the weather conditions were conducive to serious icing probability when operating in a gliding flight profile.

Probable Cause and Findings

The National Transportation Safety Board determines the probable cause(s) of this accident to be:

The flight instructor's failure to use carburetor heat during the approach while operating in atmospheric conditions that were conducive to carburetor icing, which resulted in a loss of engine power due to carburetor icing.

Findings

Aircraft	Intake anti-ice, deice - Not used/operated (Cause)
Personnel issues	Identification/recognition - Instructor/check pilot (Cause)
	Lack of action - Instructor/check pilot (Cause)
Environmental issues	Conducive to carburetor icing - Effect on operation (Cause)
	Airport structure - Contributed to outcome

Factual Information

History of Flight

Approach-IFR missed approach	Powerplant sys/comp malf/fail Attempted remediation/recovery
Emergency descent	Landing area undershoot (Defining event)
Landing-landing roll	Loss of control on ground

Pilot Information

Certificate:	Flight Instructor; Commercial	**Age:**	48, Male
Airplane Rating(s):	Multi-engine Land; Single-engine Land	**Seat Occupied:**	Right
Other Aircraft Rating(s):	None	**Restraint Used:**	3-point
Instrument Rating(s):	Airplane	**Second Pilot Present:**	No
Instructor Rating(s):	Airplane Multi-engine; Airplane Single-engine; Instrument Airplane	**Toxicology Performed:**	No
Medical Certification:	Class 3 With Waivers/Limitations	**Last FAA Medical Exam:**	02/26/2015
Occupational Pilot:	Yes	**Last Flight Review or Equivalent:**	09/03/2014
Flight Time:	(Estimated) 5516 hours (Total, all aircraft), 300 hours (Total, this make and model), 5433 hours (Pilot In Command, all aircraft), 127 hours (Last 90 days, all aircraft), 41 hours (Last 30 days, all aircraft), 4.2 hours (Last 24 hours, all aircraft)		

Pilot Information

Certificate:	Flight Instructor; Commercial	**Age:**	54, Male
Airplane Rating(s):	Multi-engine Land; Single-engine Land; Single-engine Sea	**Seat Occupied:**	Left
Other Aircraft Rating(s):	None	**Restraint Used:**	3-point
Instrument Rating(s):	Airplane	**Second Pilot Present:**	No
Instructor Rating(s):	Airplane Single-engine; Instrument Airplane	**Toxicology Performed:**	No
Medical Certification:	Class 2 With Waivers/Limitations	**Last FAA Medical Exam:**	09/18/2015
Occupational Pilot:	No	**Last Flight Review or Equivalent:**	02/16/2016
Flight Time:	(Estimated) 1265 hours (Total, all aircraft), 6.5 hours (Total, this make and model), 1175 hours (Pilot In Command, all aircraft), 138 hours (Last 90 days, all aircraft), 54 hours (Last 30 days, all aircraft), 4 hours (Last 24 hours, all aircraft)		

Aircraft and Owner/Operator Information

Aircraft Make:	PIPER	**Registration:**	N190ND
Model/Series:	PA 44 180	**Aircraft Category:**	Airplane
Year of Manufacture:	1989	**Amateur Built:**	No
Airworthiness Certificate:	Normal	**Serial Number:**	4495002
Landing Gear Type:	Retractable - Tricycle	**Seats:**	4
Date/Type of Last Inspection:	06/28/2016,	**Certified Max Gross Wt.:**	3800 lbs
Time Since Last Inspection:		**Engines:**	2 Reciprocating
Airframe Total Time:	9927 Hours as of last inspection	**Engine Manufacturer:**	LYCOMING
ELT:	C91 installed, not activated	**Engine Model/Series:**	O-360-A1H6
Registered Owner:	PLANE NONSENSE INC	**Rated Power:**	180 hp
Operator:	PLANE NONSENSE INC	**Operating Certificate(s) Held:**	None

Meteorological Information and Flight Plan

Conditions at Accident Site:	Visual Conditions	**Condition of Light:**	Day
Observation Facility, Elevation:	KEEN, 481 ft msl	**Distance from Accident Site:**	0 Nautical Miles
Observation Time:	1555 UTC	**Direction from Accident Site:**	59°
Lowest Cloud Condition:	Few / 7500 ft agl	**Visibility**	10 Miles
Lowest Ceiling:		**Visibility (RVR):**	
Wind Speed/Gusts:	Calm /	**Turbulence Type Forecast/Actual:**	/ None
Wind Direction:		**Turbulence Severity Forecast/Actual:**	/ N/A
Altimeter Setting:	29.82 inches Hg	**Temperature/Dew Point:**	27°C / 19°C
Precipitation and Obscuration:	No Obscuration; No Precipitation		
Departure Point:	BEDFORD, MA (BED)	**Type of Flight Plan Filed:**	IFR
Destination:	Keene, NH (EEN)	**Type of Clearance:**	IFR
Departure Time:	1105 EDT	**Type of Airspace:**	Class G

Airport Information

Airport:	DILLANT-HOPKINS (EEN)	**Runway Surface Type:**	Asphalt
Airport Elevation:	488 ft	**Runway Surface Condition:**	Dry
Runway Used:	02	**IFR Approach:**	ILS; Practice
Runway Length/Width:	6201 ft / 100 ft	**VFR Approach/Landing:**	Go Around; Straight-in

Wreckage and Impact Information

Crew Injuries:	2 None	**Aircraft Damage:**	Substantial
Passenger Injuries:	N/A	**Aircraft Fire:**	None
Ground Injuries:	N/A	**Aircraft Explosion:**	None
Total Injuries:	2 None	**Latitude, Longitude:**	42.898333, -72.270833 (est)

Administrative Information

Investigator In Charge (IIC):	Michael A Hicks	**Report Date:**	04/04/2017
Additional Participating Persons:	James Newton; FAA; Portland, ME		
Publish Date:	04/04/2017		
Note:	This accident report documents the factual circumstances of this accident as described to the NTSB.		
Investigation Docket:	http://dms.ntsb.gov/pubdms/search/dockList.cfm?mKey=93614		