Aviation Investigation Final Report

Location:	RICHFIELD, Idaho	**Accident Number:**	SEA95LA225
Date & Time:	September 26, 1995, 09:45 Local	**Registration:**	N736LT
Aircraft:	CESSNA TR182	**Aircraft Damage:**	Substantial
Defining Event:		**Injuries:**	2 None
Flight Conducted Under:	Part 91: General aviation - Instructional		

Analysis

The CFI stated that he pulled the mixture control to idle cut-off to simulate an engine failure. He then closed the throttle and moved the mixture control to full rich, but could not remember using carburetor heat in the descent. According to the student, the airplane descended for 3 to 4 minutes during the simulated emergency. The instructor then attempted to terminate the situation between 100-500 feet agl. The instructor stated that when he attempted to terminate the situation the engine did not respond to power. The airplane then impacted a canal bank and nosed over into the canal. Temperature and dew point values reported both by the pilot and the weather observation facility at Hailey, approximately 28 miles north-northwest, indicated a potential for serious carburetor icing during descent at the time of the accident according to a carburetor ice hazard chart.

Probable Cause and Findings

The National Transportation Safety Board determines the probable cause(s) of this accident to be: The instructor's failure to use carburetor heat during a simulated engine-out descent. Carburetor icing conditions was a factor.

Findings

Occurrence #1: LOSS OF ENGINE POWER(TOTAL) - NONMECHANICAL
Phase of Operation: DESCENT

Findings

1. (F) WEATHER CONDITION - CARBURETOR ICING CONDITIONS
2. (C) CARBURETOR HEAT - NOT USED - PILOT IN COMMAND(CFI)
3. (C) FUEL SYSTEM,CARBURETOR - ICE

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

Findings
4. TERRAIN CONDITION - DIRT BANK/RISING EMBANKMENT

Occurrence #3: NOSE OVER
Phase of Operation: EMERGENCY DESCENT/LANDING

Factual Information

On September 26, 1995, approximately 0945 mountain daylight time, a Cessna TR182, N736LT, received substantial damage when it impacted a canal bank and nosed over into a canal following a loss of engine power near Richfield, Idaho. The two occupants, a student pilot (who was also a co-owner of the airplane) and the certificated flight instructor (CFI) pilot-in-command, were not injured. The flight was a local 14 CFR 91 instructional flight originating from Friedman Memorial Airport, Hailey, Idaho. Visual meteorological conditions prevailed and no flight plan had been filed.

In initial interviews with investigators, the CFI reported that during the instructional profile, he pulled the mixture control to idle cut-off to simulate an engine failure. He then pulled the throttle to idle and moved the mixture control to full rich. He could not remember applying carburetor heat for the descent. His subsequent written report of the accident stated: "During a simulated engine emergency at about 6500 MSL the engine did not respond to power at 500 AGL. Impacted a canal bank at near stall [and] nosed over into the canal, upside down." The CFI also indicated in his written report on the accident that the airplane was equipped with a fuel-injected Lycoming LO-540 engine. The FAA representative to the accident indicated that the engine was in fact a carbureted Lycoming O-540-L3C5D engine. A representative from Cessna's product safety department also indicated to the NTSB investigator that the accident aircraft had been manufactured with an O-540-L3C5D engine.

In a follow-up telephone interview with the student on March 1, 1996, the student stated that he believed the instructor had pulled the carburetor heat out but was not certain of this. He stated that to the best of his recollection, the simulated engine failure situation started at 3,000 to 4,000 feet above ground level and lasted 3 to 4 minutes before the instructor attempted to terminate it at an estimated height of 100 to 150 feet above ground level. The student stated that he did not remember the position of the mixture control at the time recovery from the situation was attempted but was "sure it was in."

The 0945 surface observation at Hailey, approximately 28 nautical miles north-northwest of the accident site, indicated a temperature of 44 degrees F (7 degrees C) and a dewpoint of 34 degrees F (1 degree C). The pilot reported in his written accident report that the temperature at the time of the accident was 60 degrees F (16 degrees C); he did not report a dewpoint value. These temperature and dewpoint values were checked against a carburetor icing hazard chart produced by Transport Canada. Entering the chart with the temperature and dewpoint values of the 0945 Hailey surface observation yielded a plot in an area of the chart annotated "Serious icing - any power". Using the pilot's reported temperature and the dewpoint value of the 0945 Hailey observation yielded a plot in an area of the chart labeled "Serious icing - descent power".

Pilot Information

Certificate:	Airline transport	**Age:**	47,Male
Airplane Rating(s):	Single-engine land; Multi-engine land	**Seat Occupied:**	Right
Other Aircraft Rating(s):	None	**Restraint Used:**	
Instrument Rating(s):	Airplane	**Second Pilot Present:**	Yes
Instructor Rating(s):	Airplane multi-engine; Airplane single-engine; Instrument airplane	**Toxicology Performed:**	No
Medical Certification:	Class 2 Valid Medical--w/ waivers/lim	**Last FAA Medical Exam:**	June 26, 1995
Occupational Pilot:	UNK	**Last Flight Review or Equivalent:**	
Flight Time:	8000 hours (Total, all aircraft), 1000 hours (Total, this make and model), 8000 hours (Pilot In Command, all aircraft), 285 hours (Last 90 days, all aircraft), 76 hours (Last 30 days, all aircraft), 6 hours (Last 24 hours, all aircraft)		

Aircraft and Owner/Operator Information

Aircraft Make:	CESSNA	**Registration:**	N736LT
Model/Series:	TR182 TR182	**Aircraft Category:**	Airplane
Year of Manufacture:		**Amateur Built:**	
Airworthiness Certificate:	Normal	**Serial Number:**	R18200739
Landing Gear Type:	Retractable - Tricycle	**Seats:**	4
Date/Type of Last Inspection:	May 30, 1995 Annual	**Certified Max Gross Wt.:**	3100 lbs
Time Since Last Inspection:		**Engines:**	1 Reciprocating
Airframe Total Time:		**Engine Manufacturer:**	LYCOMING
ELT:	Installed, activated, did not aid in locating accident	**Engine Model/Series:**	O-540-L3C5D
Registered Owner:	NBZ LLC	**Rated Power:**	235 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:	SUN ,5315 ft msl	**Distance from Accident Site:**	28 Nautical Miles
Observation Time:	09:45 Local	**Direction from Accident Site:**	331°
Lowest Cloud Condition:	Unknown	**Visibility**	30 miles
Lowest Ceiling:	Broken / 6000 ft AGL	**Visibility (RVR):**	
Wind Speed/Gusts:	10 knots /	**Turbulence Type Forecast/Actual:**	/
Wind Direction:	340°	**Turbulence Severity Forecast/Actual:**	/
Altimeter Setting:	29 inches Hg	**Temperature/Dew Point:**	7°C / 1°C
Precipitation and Obscuration:	No Obscuration; No Precipitation		
Departure Point:	HAILEY , ID (SUN)	**Type of Flight Plan Filed:**	None
Destination:		**Type of Clearance:**	None
Departure Time:	08:50 Local	**Type of Airspace:**	

Airport Information

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

Wreckage and Impact Information

Crew Injuries:	2 None	**Aircraft Damage:**	Substantial
Passenger Injuries:		**Aircraft Fire:**	None
Ground Injuries:	N/A	**Aircraft Explosion:**	None
Total Injuries:	2 None	**Latitude, Longitude:**	43.069797,-114.169151(est)

Administrative Information

Investigator In Charge (IIC):	Nesemeier, Gregg
Additional Participating Persons:	RUSS GRAVES; BOISE , ID
Original Publish Date:	April 29, 1996
Last Revision Date:	
Investigation Class:	Class
Note:	
Investigation Docket:	https://data.ntsb.gov/Docket?ProjectID=42256

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