Aviation Investigation Final Report

Location:	HOMER, Nebraska	**Accident Number:**	CHI01FA017
Date & Time:	October 19, 2000, 10:15 Local	**Registration:**	N782B
Aircraft:	Beech 95-C55	**Aircraft Damage:**	Destroyed
Defining Event:		**Injuries:**	2 Fatal
Flight Conducted Under:	Part 91: General aviation - Instructional		

Analysis

The airplane was destroyed following an uncontrolled descent, and impact with terrain. A witness said that he heard sounds like stall and recovery sounds where power was reduced and power was added. He stated that he observed the airplane fly in stair step like maneuver. He said that during the last step, he observed the airplane in a flat attitude. He estimated that he observed the airplane there to be about 150 to 200 yards above the ground. He stated he saw the airplane in a counter clockwise spin with a nose down attitude. He said that he did not hear any sounds during the airplane's spiral. The instructor pilot had given 5.2 hours of dual instruction since he obtained his multi-engine flight instructor certificate. An on-scene investigation revealed the landing gear selector was down and the landing gear actuator was extended. The flap actuator was found extended to 15 degrees. Control continuity was established to all flight control surfaces. Control continuity was established to both engines. A thumb compression was found at all cylinders of both engines. All magnetos produced spark. Removed spark plugs were gray in color with a carbon colored coating. Both propellers exhibited an aft bend on one of their blades. The propellers exhibited chordwise abrasion. All four fuel tanks were found compromised. No preimpact anomalies were found.

Probable Cause and Findings

The National Transportation Safety Board determines the probable cause(s) of this accident to be: The inadequate remedial action the flightcrew had during the stall recovery maneuver and the flight instructor's inadequate supervision. A factor was the intentional stall the flightcrew was performing.

Findings

Occurrence #1: LOSS OF CONTROL - IN FLIGHT
Phase of Operation: MANEUVERING

Findings
1. (F) STALL - INTENTIONAL - FLIGHTCREW
2. LACK OF EXPERIENCE - PILOT IN COMMAND(CFI)
3. (C) REMEDIAL ACTION - INADEQUATE - FLIGHTCREW
4. (C) SUPERVISION - INADEQUATE - PILOT IN COMMAND(CFI)
5. ALTITUDE - LOW - PILOT IN COMMAND(CFI)

Occurrence #2: IN FLIGHT COLLISION WITH TERRAIN/WATER
Phase of Operation: DESCENT - UNCONTROLLED

Findings
6. TERRAIN CONDITION - GROUND

Factual Information

HISTORY OF FLIGHT

On October 19, 2000, about 1015 central daylight time, a Beech 95-C55, N782B, piloted by a certified flight instructor with a dual student aboard, was destroyed following an uncontrolled descent, and impact with terrain near Homer, Nebraska. The instructional flight was operating under 14 CFR Part 91. Visual meteorological conditions prevailed at the time of the accident. No flight plan was on file. The local flight departed from Sioux Gateway Airport (SUX), near Sioux City, Iowa, about 0953 and was reported to be to practicing stalls west of SUX.

A lineman at the fixed based operator stated:

> The pilot asked me to top the plane and then put it away. I filled both wings (total of 52 gals), cleaned the windshield and the plane was then put in the hanger. The plane seemed to be in perfect condition. Nothing unusual.

A Federal Aviation Administration (FAA) air traffic controller stated:

> Baron 782B called with information Bravo wanting to taxi to runway 17 going northwest to the west practice area. I told Baron 782B to taxi to runway 17 and asked if he wanted flight following. He (N782B) said he didn't.

Another air traffic controller stated:

> N782B called me ready for departure on runway 17. I issued N782B the wind [and] cleared him for take off. After he was airborne I approved a right turn out of the traffic pattern.

A witness stated that he heard airplane sounds and shut his pick up truck off to listen to the airplane. He said that he heard sounds like stall and recovery sounds where power was reduced and power was added. He stated that he observed the airplane fly in a downward stair step like maneuver. He said that during the last step, he observed the airplane in a flat attitude. He estimated that he observed the airplane to be about 150 to 200 yards above the ground during the last maneuver. He stated he saw the airplane in a counter clockwise spin with a nose down attitude. He said that he did not hear any sounds during the airplane's spiral. He sketched the airplane's direction on a sheet of paper. See appended sketch.

PERSONNEL INFORMATION

The certified flight instructor held an airline transport pilot certificate with an airplane multiengine land rating and commercial privileges for single-engine land airplanes and rotorcraft helicopter. He held a flight instructor certificate with airplane single-engine, multi-

engine, and airplane instrument ratings. His second-class medical certificate was issued on June 26, 2000, with limitations for corrective lenses. A FAA inspector reviewed the pilot's logbook. The logbook recorded that the pilot had accumulated 2,510 total flight hours and 890 flight hours in multi-engine airplanes. The logbook showed he had given 5.2 hours of dual instruction since he obtained his multi-engine flight instructor rating.

The dual student pilot held a private pilot certificate with a single-engine land airplane rating. He received his private pilot certificate, on February 9, 1999. He held a FAA third-class medical certificate which was issued on May 5, 1998, with the limitation for corrective lenses. His logbook showed 124.4 hours of total flight time.

AIRCRAFT INFORMATION

The accident airplane, N782B, was a Beech 95-C55, Baron, serial number TE-247, twin engine, low-wing airplane with retractable tricycle landing gear. The airplane was powered by two Continental IO-520-C, six cylinder, horizontally opposed, fuel-injected engines rated at 285 horsepower. The airplane's logbooks showed the last annual inspection was dated July 14, 2000. The airplane's total time listed at that annual inspection was 3,745.4 hours.

METEOROLOGICAL INFORMATION

At 0955, the SUX weather observation was: Wind 160 degrees at 6 knots; visibility 10 statute miles; sky condition clear; temperature 17 degrees C; dew point 8 degrees C; altimeter 30.00 inches of mercury.

WRECKAGE AND IMPACT INFORMATION

An on-scene investigation was conducted. The airplane came to rest at latitude 42 degrees 21.34' N and longitude 96 degrees 31.61' W. Three depressions, about six inches deep, were observed. The depressions were in front of the engines and nose. Linear ground scars were observed between the front of the engines and nose to the depressions. The ground scar in front of the right engine extended two feet nine inches to its depression. That ground scar had a 70-degree heading as viewed from the depression toward the right engine. The ground scar in front of the left engine extended about 11 feet to its depression. That ground scar had an 84-degree heading as viewed from the depression toward the left engine. The nose landing light was found imbedded in the depression in front of it. The ground scar between the nose and the center depression was three feet nine inches. The skin on the underside of the nose exhibited an upward crushing. The left side of the fuselage was torn by the pilot's seat. The fuselage and empennage exhibited a counterclockwise cant as viewed from in front of the nose. The empennage was torn under the horizontal stabilizer. The right horizontal stabilizer exhibited a curved upward deformation. The undersides of both engine cowlings were crushed

upward. The wings exhibited a downward deformation outboard of the engine nacelles. The landing gear selector was down and the landing gear actuator was fully extended. The flap handle was found in the full down position. The flap actuator was found extended to 15 degrees of flap travel. The cabin and cargo doors were separated from the fuselage. Control continuity was established to all flight control surfaces. Control continuity was established to both engines. The magnetic compass read 220 degrees on-scene. All cylinders of both engines exhibited a thumb compression when their crankshaft was rotated. All magnetos produced spark when rotated. Removed spark plugs were gray in color with a carbon colored coating. Both propellers exhibited an aft bend on one of their two blades. Those bends started about 10 inches outboard of the hub. The propeller blades exhibited chordwise abrasion. All four fuel tanks were found ruptured. No preimpact anomalies were found. See appended photographs.

MEDICAL AND PATHOLOGICAL INFORMATION

An autopsy was performed on the pilots by the Dakota County Coroner's Office on October 19, 2000.

The FAA Civil Aeromedical Institute prepared a Final Forensic Toxicology Accident Report on each pilot. The reports were negative for both pilots.

ADDITIONAL INFORMATION

The parties to the investigation included the FAA, Teledyne Continental Motors, and Raytheon Aircraft Company.

The aircraft wreckage was released to an operator's representative on October 21, 2000.

Flight instructor Information

Certificate:	Airline transport	**Age:**	38,Male
Airplane Rating(s):	Single-engine land; Multi-engine land	**Seat Occupied:**	Right
Other Aircraft Rating(s):	Helicopter	**Restraint Used:**	
Instrument Rating(s):	Airplane	**Second Pilot Present:**	Yes
Instructor Rating(s):	Airplane multi-engine; Airplane single-engine; Instrument airplane	**Toxicology Performed:**	Yes
Medical Certification:	Class 2 Valid Medical--w/ waivers/lim	**Last FAA Medical Exam:**	June 26, 2000
Occupational Pilot:	Yes	**Last Flight Review or Equivalent:**	August 23, 2000
Flight Time:	2510 hours (Total, all aircraft)		

Student pilot Information

Certificate:	Private	**Age:**	45,Male
Airplane Rating(s):	Single-engine land	**Seat Occupied:**	Left
Other Aircraft Rating(s):	None	**Restraint Used:**	
Instrument Rating(s):	None	**Second Pilot Present:**	Yes
Instructor Rating(s):	None	**Toxicology Performed:**	Yes
Medical Certification:	Class 3 Expired	**Last FAA Medical Exam:**	May 5, 1998
Occupational Pilot:	No	**Last Flight Review or Equivalent:**	
Flight Time:	124 hours (Total, all aircraft)		

Aircraft and Owner/Operator Information

Aircraft Make:	Beech	**Registration:**	N782B
Model/Series:	95-C55 95-C55	**Aircraft Category:**	Airplane
Year of Manufacture:		**Amateur Built:**	
Airworthiness Certificate:	Normal	**Serial Number:**	TE-247
Landing Gear Type:	Retractable - Tricycle	**Seats:**	6
Date/Type of Last Inspection:	July 14, 2000 Annual	**Certified Max Gross Wt.:**	5324 lbs
Time Since Last Inspection:	63.2 Hrs	**Engines:**	2 Reciprocating
Airframe Total Time:	3745.4 Hrs as of last inspection	**Engine Manufacturer:**	Continental
ELT:	Installed, activated, did not aid in locating accident	**Engine Model/Series:**	IO-520-C
Registered Owner:	AVIATORS ANONYMIOUS INC.	**Rated Power:**	285 Horsepower
Operator:		**Operating Certificate(s) Held:**	None
Operator Does Business As:	JETSUN AVIATION	**Operator Designator Code:**	

Meteorological Information and Flight Plan

Conditions at Accident Site:	Visual (VMC)	**Condition of Light:**	Day
Observation Facility, Elevation:	SUX,1098 ft msl	**Distance from Accident Site:**	8 Nautical Miles
Observation Time:	09:55 Local	**Direction from Accident Site:**	60°
Lowest Cloud Condition:	Clear	**Visibility**	10 miles
Lowest Ceiling:	None	**Visibility (RVR):**	
Wind Speed/Gusts:	6 knots /	**Turbulence Type Forecast/Actual:**	/
Wind Direction:	160°	**Turbulence Severity Forecast/Actual:**	/
Altimeter Setting:	30 inches Hg	**Temperature/Dew Point:**	17°C / 8°C
Precipitation and Obscuration:	No Obscuration; No Precipitation		
Departure Point:	SIOUX CITY, IA (SUX)	**Type of Flight Plan Filed:**	None
Destination:		**Type of Clearance:**	None
Departure Time:	09:53 Local	**Type of Airspace:**	Class G

Wreckage and Impact Information

Crew Injuries:	2 Fatal	**Aircraft Damage:**	Destroyed
Passenger Injuries:		**Aircraft Fire:**	None
Ground Injuries:	N/A	**Aircraft Explosion:**	None
Total Injuries:	2 Fatal	**Latitude, Longitude:**	42.320529,-96.489768(est)

Administrative Information

Investigator In Charge (IIC):	Malinowski, Edward
Additional Participating Persons:	DALLAS BAKER; Federal Aviation Administration; LINCOLN, NE R. S Boyle; Teledyne Continental Motors; Arvada, CO Brian D Cassidy; Raytheon Aircraft Company; Wichita, KS
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Note:	
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