National Transportation Safety Board
Aviation Accident Final Report

Location:	Casa Grande, AZ	**Accident Number:**	WPR13FA115
Date & Time:	02/06/2013, 1135 MST	**Registration:**	N555FV
Aircraft:	BEECH E90	**Aircraft Damage:**	Destroyed
Defining Event:	Loss of control in flight	**Injuries:**	2 Fatal
Flight Conducted Under:	Part 91: General Aviation - Instructional		

Analysis

The lineman who spoke with the pilot/owner of the accident airplane before its departure reported that the pilot stated that he and the flight instructor were going out to practice for about an hour. The flight instructor had given the pilot/owner his initial instruction in the airplane and flew with the pilot/owner regularly. The flight instructor had also given the pilot/owner about 58 hours of dual instruction in the accident airplane. The pilot/owner had accumulated about 51 hours of pilot-in-command time in the airplane make and model. It is likely that the pilot/owner was the pilot flying.

Several witnesses reported observing the accident sequence. One witness reported seeing the airplane pull up into vertical flight, bank left, rotate nose down, and then impact the ground. One witness reported observing the airplane go from east to west, turn sharply, and then go north of the runway. He subsequently saw the airplane hit the ground. One witness, who was a pilot, stated that he observed the airplane enter a left bank and then a nose-down attitude of about 75 degrees at an altitude of about 300 feet above ground level, which was too low to recover.

It is likely that the pilot was attempting a go-around and pitched up the airplane excessively and subsequently lost control, which resulted in the airplane impacting flat desert terrain about 100 feet north of the active runway at about the midfield point in a steep nose-down, left-wing-low attitude. The airplane was destroyed by postimpact forces and thermal damage. All components necessary for flight were accounted for at the accident site. A postaccident examination of the airframe and both engines revealed no anomalies that would have precluded normal operation. Additionally, an examination of both propellers revealed rotational scoring and twisting of the blades consistent with there being power during the impact sequence. No anomalies were noted with either propeller that would have precluded normal operation.

Toxicological testing of the pilot was negative for drugs and alcohol. The flight instructor's toxicology report revealed the presence of tetrahydrocannabinol (THC). Given the elevated levels of metabolite in the urine and kidney, the absence of quantifiable THC in the urine, and

the low level of THC in the kidney and liver, it is likely that the flight instructor most recently used marijuana at least several hours before the accident. However, the effects of marijuana use on the flight instructor's judgment and performance at the time of the accident could not be determined.

A review of the flight instructor's personal medical records indicated that he had a number of medical conditions that would have been grounds for denying his airman medical certificate. The ongoing treatment of his conditions with more than one sedating benzodiazepine, including oxazepam, simultaneously would also likely not have been allowed. However, none of the prescribed, actively sedating medications were found in the flight instructor's tissues, and oxazepam was only found in the urine, which suggests that the flight instructor used the medication many hours and possibly several days before the accident. The toxicology findings indicate that the flight instructor likely did not experience any impairment from the benzodiazepine medication itself; however, the cognitive effects from the underlying mood disturbance could not be determined.

Probable Cause and Findings

The National Transportation Safety Board determines the probable cause(s) of this accident to be: The pilot's loss of control of the airplane after pitching it excessively nose up during a go-around, which resulted in a subsequent aerodynamic stall/spin.

Findings

Aircraft	Airspeed - Not attained/maintained (Cause)
Personnel issues	Incorrect action performance - Pilot (Cause) Use of equip/system - Pilot (Cause)

Factual Information

HISTORY OF FLIGHT

On February 6, 2013, about 1135 mountain standard time, a Beechcraft E-90, N555FV, was destroyed following a loss of control during an attempted go-around and impact with terrain at the Casa Grande Airport (CGZ), Casa Grande, Arizona. The certified private pilot, who was the registered owner and occupied the left pilot seat, and the airline transport pilot/certified flight instructor (CFI) who occupied the right pilot seat, sustained fatal injuries. Visual meteorological conditions prevailed at the time of the accident and no flight plan was filed. The reported local instructional flight was conducted in accordance with 14 Code of Federal Regulations (CFR) Part 91. The flight departed the Marana Regional Airport (AVQ) , Marana, Arizona, about 1030.

In a statement provided to the National Transportation Safety Board (NTSB) investigator-in-charge, the Chief of Line Service at the fixed based operation where the airplane was based reported that after pulling the airplane out of the hangar, the CFI indicated that the airplane would not need to be fueled. The CFI stated that there was enough fuel on board, and that they were only going to be out for an hour. The lineman said that shortly thereafter, the pilot/owner arrived and began a preflight of the airplane. The pilot stated that he and the CFI were just going out to practice for an hour or so, and then asked that ground power be applied. The pilot added that they had plenty of fuel for what they were going to do. The lineman stated that the airplane departed AVQ between 1015 and 1030.

Four witnesses to the accident provided written statements to the IIC relative to their observations of the accident sequence:

Witness #1, a local fire fighter, reported that upon hearing his partner yell an expletive, he looked up and saw a white airplane with blue or dark green stripes pull up into a vertical flight, bank left, then rotate down nose first. The witness stated that he heard the engines as it banked up and over, and it sounded as if [they were] under full power. The witness opined that the airplane impacted the ground in a vertical fashion and burst into flames.

Witness #2, a captain/paramedic for the local fire department, reported that while on the second story balcony at the CGZ fire station and looking to the west, he observed the belly of a twin propeller airplane banking straight up, going from west to east, turning sharply, and then going down to the north of the runway. The witness stated that the plane hit the ground and burst into flames, which was followed by a huge explosion.

Witness #3 stated that he was riding his bicycle at the airport, and as he looked toward the direction of runway 5 he observed a twin engine aircraft in a left hand bank and a nose down attitude of about 75 degrees, at an altitude of about 300 feet [above ground level]. The witness, himself a pilot, felt the aircraft was too low to recover, and subsequently watched it crash, after which he reported the accident to the CGZ fire department.

Witness #4 reported that she watches many airplanes perform "touch down and take off" practice, and that the accident airplane did not appear to be anything different until she noticed something in the sound of the engine. She stated, "It became too quiet, as if the engine had stopped completely." The witness stated that the airplane seemed to be on a normal route for touchdown, then the dirt flew up and she thought the plane went off the runway. She added that while she watched the dirt clear she heard a pop like a tire blowing, then saw the

explosion.

A postaccident on-site examination of the wreckage revealed that the airplane was destroyed following impact with flat, dirt-covered terrain located about 150 feet west of runway 5 (5,200 feet in length by 100 feet in width), and about 120 feet south of the 2000-foot distance remaining marker. Impact orientation was on a measured magnetic heading of about 050 degrees. The airplane came to rest on a measured magnetic heading of about 135 degrees at an elevation of 1,452 feet mean sea level. The wreckage area measured about 175 feet east to west, and about 75 feet north to south. The airplane, which was destroyed by a combination of severe impact forces and thermal damage, was recovered to a secured storage facility for further examination.

PERSONNEL INFORMATION

Pilot #No. 1

The left-front seat pilot, age 65, possessed a Federal Aviation Administration (FAA) private pilot certificate for airplane single-engine land, airplane multiengine land, and instrument airplane ratings. His most recent FAA third-class airman medical certificate was issued on November 13, 2012, with the limitation "must wear corrective lenses."

A review of the pilot's personal logbooks revealed that the most recent entry was made on December 15, 2012, about two months prior to the accident flight. The last entry, which was in the accident airplane, totaled 2.2 hours of dual instruction received from the accident CFI. The logbook review further revealed that the pilot had accumulated a total time of 1,079 flight hours in all aircraft, 663 flight hours in multiengine airplanes, and 112 flight hours in the same make and model as the accident airplane. The pilot listed about 51 hours as pilot in command of the accident airplane. It was also revealed that prior to the purchase of the accident airplane, the pilot had owned a Cessna 414 multiengine airplane, in which he had accumulated a total of 551 hours. According to an aviation insurance application, the pilot indicated that his most recent biennial flight review was completed on October 19, 2012.

Pilot #No. 2

The right-front seat pilot, age 51, possessed an airline transport pilot certificate for airplane multiengine land, commercial privileges for airplane single-engine land, a certified flight instructor certificate for airplane single-engine and multiengine, and instrument airplanes, and a basic ground instructor certificate. His most recent FAA second-class airman medical certificate was issued on October 22, 2012, with the limitation "must wear corrective lenses."

A review of the pilot's personal logbooks revealed that the last entry was made on October 25, 2012. As of this date, the logbook review revealed that the pilot had accumulated a total flight time in all aircraft of 8,552 hours, 2,787 hours in multiengine airplanes, 325 hours in the accident airplane make and model, 58 hours of dual instruction given to the left-seat private pilot in the accident airplane. The pilot's logbook also revealed that he had completed his most recent flight review on November 8, 2012.

Training records supplied to the NTSB IIC by SIMCOM Training Centers of Scottsdale, Arizona, revealed that the pilot had completed his most recent Beechcraft King Air B200 Recurrent course with C90 Differences training on November 9, 2012. Total simulator time was recorded as 3 hours.

AIRCRAFT INFORMATION

The Beech E90 twin-engine airplane, serial number LW-248, manufactured in 1977, was a high performance, low wing, of semi-monocoque construction. The airplane was equipped with dual controls for the left and right pilot positions.

The airplane was powered by two 750-horsepower Pratt & Whitney PT6A-34 engines (left engine serial number RB0274; right engine serial number RB0186). The most recent inspection of both engines, performed in compliance with a Phase 1-2 per the Beechcraft Maintenance Manual, occurred on December 6, 2012. At that time records revealed a time since new (TSN) of 1,013.0 hours for the left engine, a TSN of 1,491.7 hours for the right engine. At the time of the inspections the aircraft's total airframe time was 8,345.4 hours, and a Hobbs time of 2,418.4 hours.

The airplane was equipped with 3-bladed, Hartzell HC-B3TN-3B propellers. Both propellers underwent their most recent maintenance on December 6, 2012, in accordance with Phase 1-2 of the Beechcraft Maintenance Manual.

The airplane was issued a standard airworthiness certificate on September 6, 1977.

METERROLOGICAL INFORMATION

At 1835, the CGZ Automated Weather Observation System reported, wind 190 degrees at 4 knots, visibility 10 miles, temperature 17° Celsius (C), dew point 7° C, and an altimeter setting of 29.97 inches of mercury.

WRECKAGE AND IMPACT INFORMATION

The airplane impacted terrain in a steep nose down, left wing low attitude, and was destroyed by impact and thermal damage. A post-recovery examination of the wreckage by representatives from Beechcraft, Pratt & Whitney, and Hartzell Propellers, overseen by the NTSB IIC and representative from the FAA revealed the following:

Airframe Examination

The aft fuselage and empennage sections had separated from the main fuselage section by impact forces and postimpact fire. The empennage remained attached to the aft fuselage by flight control and flight trim control cables only. The right stabilizer and elevator were consumed by postimpact fire. The elevator and rudder bellcranks and assemblies were visible and exhibited thermal and impact damage. The vertical stabilizer, rudder, left elevator, left stabilizer and the aft fuselage area remained attached and displayed postimpact fire and impact damage. All control cables were intact and were cut during the retrieval process.

The right elevator trim actuator remained attached by control cables only and remained attached to a fragment of the rear spar. The right elevator trim actuator extension measured 0.75 inches in length, which equates to 14 degrees tab down (nose up trim). The right elevator trim control rod was fractured. The cables remained attached to the drum. The right elevator balance weight was found in the main wreckage and was exposed to postimpact fire and was partially melted.

The left elevator trim actuator remained attached to the stabilizer and elevator. The control cables remained attached to the drum. The left elevator trim actuator extension was 0.75 inches in length, which equates to 14 degrees tab down (nose up trim). The leading edge boot was burned away, and the paint was burned and bubbled. The elevator remained attached at all hinges. The elevator trim surface remained attached at the piano hinge. The left elevator

balance weight remained attached and was not fire damaged.

The rudder remained attached to the rudder bellcrank and the two mounting hinges. The rudder trim actuator rod extension measured 8.875 inches, which equates to a near neutral tab position. The rudder trim actuator remained attached to the rudder and the rudder trim actuator rod remained attach to the rudder trim tab. The rudder trim chain remained attached to the actuator gear, and the chain remained attached to the control cables. Both primary rudder control cables remained attached to the rudder bellcrank. Both rudder return springs remained attached to the bellcrank. The vertical stabilizer was mostly consumed by postimpact fire and remained attached to the aft bulkhead. The forward spar of the vertical stabilizer was burned through, and the aft spar remained attached.

The inboard portion of the right wing was consumed by postimpact fire, while the outboard section of the wing remained attached to the airframe by the aileron cables only; the cables were cut for retrieval purposes. The right wing was burned away with about 12 feet remaining of the outboard section. The outboard portion of the aileron was thermally damaged. Sixty-six inches of the aileron remained intact. The aileron control rod remained attached to the aileron, and the aileron control cables remained attached to the bellcrank. Both aileron control cables were pulled by hand and actuation of the bellcrank and the aileron were observed. The aileron remained attached to the center and outboard hinges. The inboard hinge remained attached to the rear spar. The ground adjustable tab remained attached to the aileron. The leading edge of the right wing tip displayed compression damage measuring 42 inches in length. The right flap was not observed.

The outboard 7 feet of the left wing, excluding the wing tip, was thermally damaged. The left aileron had separated from the wing. It was intact with impact damage, and displayed leading edge compression damage at all three hinge points. Spanwise compression damage was displayed on the outboard end. The mounting structure of the wing remained attached to all three hinges; each hinge remained attached to the aileron. The aileron trim tab actuator separated from the trim tab and was found in its relative position on the left wing. The trim cable remained attached to the drum. The actuator rod extension measured 1.25 inches, which equated to about 2.8 degrees tab up (roll right). According to the HBC representative, neutral aileron trim would measure 1.17 inches on the actuator rod, and 5 degree deflection would measure 1.31 inches. The left flap was not observed.

The cabin and cockpit areas were both destroyed, with extreme fragmentation observed. Both of the pilot's outboard yoke control horns were observed separated and exhibited impact and thermal damage. Both yokes were loose in their sleeves and were removed easily from the console. The left yoke control column shaft had separated and was about 19 inches in length. The left horn of the left yoke had also separated. Additionally, the right horn of the right yoke had also separated. The right yoke control column shaft was observed separated, and was about 5 1/2 inches in length. Both control column sleeves were deformed to the left and forward in direction. Both left and right control horns were sent to the NTSB Materials Laboratory for examination and analysis in an effort to determine the failure mode of each. All cockpit panel instrumentation was destroyed by thermal and impact damage.

The landing gear handle was bent to the left and appeared to be midway between the extended and retracted positions. The flap selector was in the full flap extended position. The elevator trim wheel had thermal discoloration and deformation. The indicator read about 14 units on the side scale. The indicator arrow was burned away and the indication was estimated by rivet

placement on the surrounding structure. The aileron trim wheel indicator read about zero. The rudder trim wheel indicator read about 1 unit yaw left.

The power control quadrant was observed, with the left power lever and left propeller lever positioned aft of their associated right power lever and propeller lever. Both left and right condition levers were observed in the full forward position.

The right main landing gear had separated from the fuselage and was found lying to the left front of the wreckage area. The left main landing gear remained attached to the fuselage and was observed to be in the down and locked position.

The examination of the airframe revealed no mechanical anomalies that would have precluded normal operation.

Engine Examinations

Both the left and right engines displayed contact signatures to their internal components characteristic of engines producing symmetrical power at the time of impact, likely in the mid to upper power range.

Left Engine

The engine was a Pratt & Whitney Canada PT6A-34 model, serial number PCE RB0274. The engine was attached to the engines mounts and partially attached to the firewall. The engine was consumed by post impact thermal damage and the propeller assembly and portion of the front reduction gearbox had separated from the core. The propeller blades exhibited chordwise scratches, twisting and bending to the aft. One propeller blade was separated at the hub. The propeller spinner was partially attached and the propeller and over speed governor were attached by engine tubing. The exhaust duct was crushed inward and partially deformed on the bottom portion. The exhaust stacks were deformed and crushed aft and the left exhaust stack exhibited a small outward penetration on the upper portion. The gas generator case exhibited compression deformation and all of the inlet case struts were fractured.

The engine was separated at the C flange. The upstream and downstream faces of the compressor turbine discs and blades exhibited deformation and rubbing. The power turbine and baffle exhibited rubs on both sides from contact with the power turbine and compressor turbine discs and blades. The power turbine exhibited fractured blade surfaces of varying heights. Only seven blades remained in the blade fixings. No rotational continuity could be established due to impact damage. The fuel lines were intact. The only engine accessories that remained attached were the fuel control unit and fuel pump. The oil filter was removed and was clear of contamination, and the residual oil was clean. The fuel filter was not removed due to thermal damage. At least one quart of oil was observed to have leaked out during the examination.

The examination of the left engine revealed no mechanical anomalies that would have precluded normal operation.

Right Engine

The engine was a Pratt & Whitney Canada PT6A-34 model, serial number PCE RB0186. The engine was attached to the engines mounts and partially attached to the firewall. The engine was consumed by post impact thermal damage. The propeller assembly and portion of the front reduction gearbox were separated but remained attached by airplane tubing and wiring.

The exhaust duct was crushed inward and partially deformed. The exhaust left stack was compressed and both stacks were deformed. A small outward penetration on the upper right portion of the exhaust duct was observed. The propeller blades exhibited chord wise scratches, twisting and bending to the aft. One blade exhibited thermal damage and only about 18 inches of the blade remained from the hub. One blade tip was bent aft. The propeller spinner was partially separated. The overspeed governor was attached and the propeller governor was attached by engine tubing.

The engine was separated at the C flange. The upstream and downstream faces of the compressor turbine discs and blades exhibited deformation and rubbing. The power turbine vane and baffle exhibited rubs on both sides from contact with the power turbine and compressor turbine discs and blades. The power turbine exhibited fractured blade surfaces of varying heights. Four blades had liberated from the disc. The engine was rotated by hand through the compressor turbine disc and mechanical rotation continuity was established to the accessory gear box. The fuel lines were intact with the exception of several fuel nozzle transfer tubes that were thermally damaged. All engine accessories remained attached with the exception of the fuel oil heater that was fractured at its mount. The oil filter was removed and was clear of contamination and the residual oil was clean. The fuel filter was not removed due to thermal damage. A small amount of oil leaked out during the exam.

The examination of the right engine revealed no mechanical anomalies that would have precluded normal operation.

Propeller Examinations

The right propeller remained attached to the gearbox; however the gearbox had separated from the engine due to a fractured engine shaft. The propeller had extreme thermal damage and was missing the spinner dome, and the bulkhead had melted away from around the edges.

The left propeller remained attached to the gearbox; however the gearbox had separated from the engine due to a fractured engine shaft. One blade was fractured off the hub and the upper half of the spinner dome was missing.

Both propellers exhibited rotational scoring and twisting to the blades, which is indicative of power ON during impact.

There were no discrepancies noted that would preclude normal operation. All damage was consistent with impact damage.

MEDICAL AND PATHOLOGICAL INFORMATION

On February 8, 2013, an autopsy was performed on the left-seat private pilot at the Forensic Science Center, Tucson, Arizona. The findings of the autopsy revealed that the cause of death was as a result of multiple blunt force injuries.

The Forensic Toxicology Fatal Accident Report was prepared by the FAA Civil Aeronautical Medical Institute, Oklahoma City, Oklahoma, for the private pilot. The report indicated no Carbon Monoxide detected in Blood (Heart), testing for Cyanide not performed, no Ethanol detected in Vitreous, and tests were negative for drugs in Urine.

On February 8, 2013, an autopsy was performed on the right-seat airline transport pilot/certified flight instructor (CFI) at the Forensic Science Center, Tucson, Arizona. The findings of the autopsy revealed that the cause of death was as a result of multiple blunt force

injuries.

The Forensic Toxicological Fatal Accident Report was prepared by the FAA Civil Aeronautical Medical Institute for the CFI. The report indicated testing for Carbon Monoxide and Cyanide were not performed, and no Ethanol detected in Urine. Tests for drugs indicated the following values:

Oxazepam NOT detected in Liver

0.086 (ug/ml, ug/g) Oxazepam detected in Urine

Rosuvastatin detected in Liver

0.0035 (ug/ml, ug/g) Tetrahydrocannabinol (Marihuana) detected in Lung

0.0026 (ug/ml, ug/g) Tetrahydrocannabinol (Marihuana) detected in Kidney

0.1216 (ug/ml, ug/g) Tetrahydrocannabinol Carboxylic Acid (Marihuana) detected in Urine

0.0298 (ug/ml, ug/g) Tetrahydrocannabinol Carboxylic Acid (Marihuana) detected in Kidney

0.0158 (ug/ml, ug/g) Tetrahydrocannabinol Carboxylic Acid (Marihuana) detected in Liver

0.0042 (ug/ml, ug/g) Tetrahydrocannabinol Carboxylic Acid (Marihuana) detected in Lung

Valproic Acid detected in Urine

Valproic Acid detected in Liver

A review of the CFI's FAA medical records by the NTSB Chief Medical Officer revealed the following: reported a hospital admission for an episode of severe vertigo in 1992; reported having had surgery to remove a benign tumor (a cholesteatoma) from the left ear in 1990; reported intermittent use of an intranasal steroid spray used to decrease swelling and congestion in 2010, and reported using Crestor, a cholesterol lowering medication in 2011.

Toxicology testing conducted by a private laboratory found that the CFI had oxazepam (0.127ug/ml) and tetrahydrocannabinol carboxylic acid (0.160ug/ml) in his urine, as well as 0.0096 ug/ml of tetrahydrocannabinol carboxylic acid and 0.069 gm/dL of ethanol in splenic tissue.

Toxicology testing performed by the FAA revealed oxazepam (0.086 ug/ml) in urine but not in liver tissue. Rosuvastatin was detected in liver. Valproic acid was detected in urine and liver. In addition, tetrahydrocannabinol (marijuana) was detected lung (0.0035 ug/ml) and kidney (0.0026 ug/ml) and its primary metabolite, tetrahydrocannabinol carboxylic acid was found in urine (0.1216 ug/ml), kidney (0.0298 ug/ml) liver (0.0158 ug/ml, and lung (0.0042 ug/ml).

A review of the CFI's personal medical records revealed diagnoses of high cholesterol, hypertension, hypothryroidism, insomnia, dysthymia, obesity, sinus disease, and chronic headaches. Over the period of available records from 2006 to 2012, in addition to the rosuvastatin he reported to the FAA, the pilot was treated with olmesartan medoxomil (an angiotensin II receptor antagonist marketed under the trade name Benicar and used to treat hypertension), temazepam (a benzodiazepine sedative used to treat anxiety marketed under the trade name Restoril), lorazepam (a benzodiazepine sedative used to treat anxiety and seizures marketed under the trade name Ativan), diazepam (a long acting benzodiazepine sedative used to treat anxiety, seizures, and muscle pain, marketed under the trade name Valium), levothyroxine (synthetic thyroid hormone, used to replace it when treating

hypothyroidism, marketed under the trade name Synthroid), and divalproex sodium (an atypical anti-epileptic typically used to treat seizures, manic episodes associated with bipolar disease, and to prevent migraines; marketed under the trade name Depakote). According to the CFI's personal medical records, the physician was using divalproex sodium to treat chronic tension headaches.

A copy of the NTSB chief medical officer's factual report is included in the public docket for this accident.

TESTS AND RESEARCH

Two sections of the pilot's control column grips were submitted to the NTSB Materials Laboratory, Washington, D.C., for examination of the failure mode of each. During the investigation the IIC determined that portion #No. 1 was identified as having been separated from the left control column, and portion #No. 2 was identified as having been separated from the right control column.

During the examination of the components described above, an NTSB Fire and Explosion Investigator reported the following:

Portion #No. 1 exhibited characteristics of exposure to a high temperature environment. There is evidence of deformation and sagging of the aluminum. Additionally there are small cracks in the aluminum oxide layer on the surface, indicative of incipient melting of the aluminum underneath. The fracture surface is granular with smoothed over edges consistent with having fused and then resolidified.

Portion #No. 2 exhibited characteristics of exposure to a high temperature environment but to a lesser degree than portion #No. 1. The black coating material on the exterior of portion #No. 2 exhibits evidence of charring and melting. Some areas of the black coating also exhibit small craters from outgassing due to thermal decomposition. There are wires on the interior of this portion with their insulation intact. The appearance of the fracture surface is granular with sharp edges. No evidence of preexisting damage or corrosion was observed on the fracture surface. The fracture is consistent with overstress. (Refer to Materials Laboratory Factual Report No. 14-004, which is appended to the docket for this accident.)

During the on site investigation it was discovered that the airplane was equipped with both a Multifunctional Display (MFD), and a Primary Functional Display, both of which contain non-volatile memory data. However, due to the condition of both components as a result of significant impact and thermal, both units were deemed too badly damaged to produce any relevant data pertinent to the investigation.

History of Flight

Approach-VFR go-around	Loss of control in flight (Defining event)
Initial climb	Aerodynamic stall/spin
Uncontrolled descent	Collision with terr/obj (non-CFIT)

Pilot Information

Certificate:	Private	**Age:**	65
Airplane Rating(s):	Multi-engine Land; Single-engine Land	**Seat Occupied:**	Left
Other Aircraft Rating(s):	None	**Restraint Used:**	Seatbelt, Shoulder harness
Instrument Rating(s):	Airplane	**Second Pilot Present:**	
Instructor Rating(s):	None	**Toxicology Performed:**	Yes
Medical Certification:	Class 3 With Waivers/Limitations	**Last FAA Medical Exam:**	11/13/2012
Occupational Pilot:	No	**Last Flight Review or Equivalent:**	
Flight Time:	1079 hours (Total, all aircraft), 112 hours (Total, this make and model), 689 hours (Pilot In Command, all aircraft), 2 hours (Last 90 days, all aircraft)		

Flight Instructor Information

Certificate:	Airline Transport; Flight Instructor	**Age:**	51
Airplane Rating(s):	Multi-engine Land; Single-engine Land	**Seat Occupied:**	Right
Other Aircraft Rating(s):	None	**Restraint Used:**	
Instrument Rating(s):	Airplane	**Second Pilot Present:**	
Instructor Rating(s):	Airplane Multi-engine; Airplane Single-engine; Instrument Airplane	**Toxicology Performed:**	Yes
Medical Certification:	Class 2 With Waivers/Limitations	**Last FAA Medical Exam:**	10/22/2012
Occupational Pilot:	Yes	**Last Flight Review or Equivalent:**	02/01/2012
Flight Time:	8552 hours (Total, all aircraft), 325 hours (Total, this make and model), 6226 hours (Pilot In Command, all aircraft)		

Aircraft and Owner/Operator Information

Aircraft Make:	BEECH	**Registration:**	N555FV
Model/Series:	E90 NO SERIES	**Aircraft Category:**	Airplane
Year of Manufacture:		**Amateur Built:**	No
Airworthiness Certificate:	Normal	**Serial Number:**	LW-248
Landing Gear Type:	Retractable - Tricycle	**Seats:**	6
Date/Type of Last Inspection:	12/06/2012, Continuous Airworthiness	**Certified Max Gross Wt.:**	10100 lbs
Time Since Last Inspection:	1 Hours	**Engines:**	2 Turbo Prop
Airframe Total Time:	8345 Hours as of last inspection	**Engine Manufacturer:**	Pratt and Whitney
ELT:	Installed, not activated	**Engine Model/Series:**	PT6A-34
Registered Owner:	Sauo Aero Services, LLC	**Rated Power:**	750 hp
Operator:	Sauo Aero Services, LLC	**Operating Certificate(s) Held:**	None

Meteorological Information and Flight Plan

Conditions at Accident Site:	Visual Conditions	**Condition of Light:**	Day
Observation Facility, Elevation:	CGZ, 1464 ft msl	**Distance from Accident Site:**	1 Nautical Miles
Observation Time:	1135 MST	**Direction from Accident Site:**	90°
Lowest Cloud Condition:	Clear	**Visibility**	10 Miles
Lowest Ceiling:	None	**Visibility (RVR):**	
Wind Speed/Gusts:	4 knots /	**Turbulence Type Forecast/Actual:**	/
Wind Direction:	190°	**Turbulence Severity Forecast/Actual:**	/
Altimeter Setting:	29.97 inches Hg	**Temperature/Dew Point:**	17°C / 7°C
Precipitation and Obscuration:	No Obscuration; No Precipitation		
Departure Point:	Marana, AZ (AVQ)	**Type of Flight Plan Filed:**	None
Destination:	Casa Grande, AZ (CGZ)	**Type of Clearance:**	None
Departure Time:	1030 MST	**Type of Airspace:**	

Airport Information

Airport:	Casa Grande Municipal Airport (CGZ)	**Runway Surface Type:**	Asphalt
Airport Elevation:	1464 ft	**Runway Surface Condition:**	Dry
Runway Used:	05	**IFR Approach:**	None
Runway Length/Width:	5200 ft / 100 ft	**VFR Approach/Landing:**	Straight-in

Wreckage and Impact Information

Crew Injuries:	2 Fatal	**Aircraft Damage:**	Destroyed
Passenger Injuries:	N/A	**Aircraft Fire:**	On-Ground
Ground Injuries:	N/A	**Aircraft Explosion:**	None
Total Injuries:	2 Fatal	**Latitude, Longitude:**	32.955833, -111.766111

Administrative Information

Investigator In Charge (IIC):	Thomas Little	**Report Date:**	08/13/2014
Additional Participating Persons:	Jeffrey A Miller; Federal Aviation Administration; Scottsdale, AZ Kris Wetherell; Beechcraft; Wichita, KS Jeff Davis; Pratt & Whitney Canada; Bridgeport, WV Daniel P Boggs; Hartzell Propeller Inc.; Piqua, OH Mark Hamilton; Transport Safety Board of Canada; ON		
Publish Date:	08/13/2014		
Investigation Docket:	http://dms.ntsb.gov/pubdms/search/dockList.cfm?mKey=86158		