



# National Transportation Safety Board Aviation Accident Final Report

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<b>Location:</b>	Seagoville, TX	<b>Accident Number:</b>	CEN15FA081
<b>Date &amp; Time:</b>	12/18/2014, 1816 CST	<b>Registration:</b>	N555SF
<b>Aircraft:</b>	BEECH V35A	<b>Aircraft Damage:</b>	Destroyed
<b>Defining Event:</b>	Loss of control in flight	<b>Injuries:</b>	1 Fatal
<b>Flight Conducted Under:</b>	Part 91: General Aviation - Personal		

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## Analysis

After a 90-minute instrument flight rules flight, the pilot descended toward his home airport and attempted six unsuccessful instrument approaches in instrument meteorological conditions (IMC). The controller terminated three GPS approaches and one instrument landing system approach because the pilot flew through the final approach course; one GPS approach was terminated because the pilot was performing S-turns on final. Sunset occurred during the third approach attempt. After the fourth approach attempt, the controller suggested that the pilot divert to an airport with visual meteorological conditions (VMC), which the pilot declined because of the airplane's low fuel status.

During the sixth approach attempt, the pilot stated he was "getting tired of flying this airplane." The controller offered him vectors to a VMC airport, but the pilot declined, stating he wanted to "keep working until we get it." Soon after he made this statement, the airplane turned right toward the final approach course and rapidly descended until terrain impact. The pilot likely either attempted to descend below IMC and/or experienced spatial disorientation, but the investigation was unable to determine the precise reason for the loss of control.

The pilot's six unsuccessful approach attempts and his decision not to divert to a VMC airport revealed poor instrument flight skills, poor fuel planning, lack of situational awareness, and poor judgment. A review of medical records revealed that the pilot was using a sedating antihistamine and had several physiological issues, including vision deficits, diabetes, diabetic neuropathy. These conditions may have had an impairing effect on the pilot, but the medical investigation was limited by the degree of damage to the pilot's body and the extent to which they may have affected the pilot at the time of the accident 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 and subsequent impact with terrain in instrument meteorological conditions.

## Findings

<b>Aircraft</b>	Performance/control parameters - Not attained/maintained (Cause)
<b>Personnel issues</b>	Aircraft control - Pilot (Cause) Fuel planning - Pilot Situational awareness - Pilot Decision making/judgment - Pilot Knowledge of procedures - Pilot
<b>Environmental issues</b>	Below VFR minima - Effect on operation (Cause)

## Factual Information

### History of Flight

Approach	Loss of control in flight (Defining event)
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On December 18, 2014, at 1816 central standard time, a Beech V35A airplane, N555SF, impacted terrain near Seagoville, Texas. The pilot, the sole occupant, was fatally injured and the airplane was destroyed. The airplane was registered to and operated by a private individual under the provisions of 14 Code of Federal Regulations Part 91 as a personal flight. Night instrument meteorological conditions existed at the time of the accident. The flight departed about 1535 from the South Arkansas Regional Airport (ELD), El Dorado, Arkansas and was destined for Mesquite Metro Airport (HQZ) Mesquite, Texas.

At 1708, after descending into the HQZ area, the pilot received vectors from air traffic control to final for the RNAV (GPS) RWY 35 approach, but he flew through the final approach course. After the controller issued a vector to rejoin final, the pilot flew through the final approach course a second time. The controller queried the pilot if he heard his last transmission, but the pilot did not respond. After a second query, the pilot responded that he was "busy flying the airplane."

At 1712, the pilot received vectors for a second GPS approach. At 1714, the controller informed him that he had flown through final approach course again, with no acknowledgment from the pilot. Following termination of this approach by the controller, the pilot requested to fly the full GPS approach by starting from outside the initial approach fix (YEAGR).

At 1723, controller informed the pilot he was abeam YEAGR and requested the aircraft's fuel status, which the pilot reported as eight hours. The controller instructed the pilot to proceed direct to YEAGR and fly the procedure turn approach. At 1735, while on the final approach course inside the final approach fix (IKUSE), the pilot was directed to execute a go-around, after the controller noticed the airplane making S-turns. The controller directed a climb to 2,000 ft mean sea level (msl) several times, but the pilot did not respond.

At 1738, the pilot acknowledged his climb clearance and agreed with the controller's suggestion to fly an ILS approach to Runway 17, which would be the fourth approach attempt. At 1744, controller instructed the pilot to intercept the localizer and cleared him for the ILS approach. At 1746, the controller advised the pilot he was flying through the final approach course, with no response. The controller canceled the approach clearance and advised the pilot of visual meteorological conditions (VMC) airports in the area where he might conduct a visual approach.

The pilot replied with his request to fly to YEAGR to attempt another GPS approach. The controller asked the pilot if it might help to talk to a different controller who was also a pilot. The pilot replied that he just wanted to fly the full GPS approach, with no shortcuts. At 1752, the controller cleared the pilot to fly direct to YEAGR and report procedure turn inbound. At

1808, the pilot was cleared for the RNAV GPS Runway 35 approach. At 1809, the controller asked the pilot if he was turning off-course towards the east and to confirm that he would turn back to the final approach. At 1810, the pilot requested a vector and the controller canceled the approach clearance.

The pilot requested vectors for another GPS approach. At 1814, the controller cleared the pilot to fly the RNAV GPS Runway 35 approach, which would be the sixth approach attempt. The pilot acknowledged the approach clearance and stated he was "getting tired of flying this airplane". The controller asked the pilot if there was anything he could do to help and if he would like to try a VMC airport. The pilot replied he would like to continue to attempt to land at HQZ and "keep working until we get it".

At 1816, after noticing a descending right turn toward the final approach course, the controller instructed the pilot to climb to 2,000 ft msl, followed by issuance of a low altitude alert. The pilot did not respond and the airplane continued to turn right and it entered into a rapid descent until terrain impact.

### Pilot Information

<b>Certificate:</b>	Commercial	<b>Age:</b>	73, Male
<b>Airplane Rating(s):</b>	Multi-engine Land; Single-engine Land	<b>Seat Occupied:</b>	Unknown
<b>Other Aircraft Rating(s):</b>	None	<b>Restraint Used:</b>	
<b>Instrument Rating(s):</b>	Airplane	<b>Second Pilot Present:</b>	No
<b>Instructor Rating(s):</b>	None	<b>Toxicology Performed:</b>	Yes
<b>Medical Certification:</b>	Class 3 Waiver Time Limited Special	<b>Last FAA Medical Exam:</b>	04/22/2014
<b>Occupational Pilot:</b>	No	<b>Last Flight Review or Equivalent:</b>	08/21/2014
<b>Flight Time:</b>	(Estimated) 5150 hours (Total, all aircraft), 4700 hours (Total, this make and model), 5150 hours (Pilot In Command, all aircraft), 25 hours (Last 90 days, all aircraft), 5 hours (Last 30 days, all aircraft), 4 hours (Last 24 hours, all aircraft)		

The pilot, age 73, held a commercial pilot certificate with airplane single-engine land, multi-engine land, and instrument ratings. On April 22, 2014, the pilot was issued a special issuance Class 3 medical certificate, which required corrective lenses be available for near vision and was not valid after one year. At the time of the medical examination, the pilot reported having 5,100 hours of total flight experience, with 40 hours in the last six months. On August 21, 2014, the pilot accomplished an instrument proficiency check in the accident airplane. Night flight experience was not recorded in the pilot's most recent logbook.

The pilot's medical history included treated hypertension since 1995 and type 2 diabetes since 1998, complicated by a degree of diabetic neuropathy that was "mild" in 2002 and not

mentioned thereafter. His medical history also included bilateral diabetic retinopathy which required laser photocoagulation, bilateral cataracts (right greater than left), and diabetic papillopathy in the left eye. In April of 2014, there was laboratory evidence of worsening renal function, but the cause was unclear and the pilot did not follow up with his physician for further testing.

At the time of his last FAA medical exam, the pilot reported using metformin, pioglitazone, valsartan, hydrochlorothiazide and nebivolol. Metformin and pioglitazone are oral prescription medications used to treat diabetes. Valsartan is an oral prescription medication for hypertension. Hydrochlorothiazide is an oral prescription diuretic medication used to treat hypertension and heart failure. Nebivolol is an oral prescription beta blocker medication used to treat hypertension.

According to his wife, the pilot was having difficulty with his night vision and depth perception. She stated that he avoided flying at night and that he had struck objects while maneuvering his car in a parking garage in the months prior to the accident.

#### Aircraft and Owner/Operator Information

<b>Aircraft Make:</b>	BEECH	<b>Registration:</b>	N555SF
<b>Model/Series:</b>	V35A	<b>Aircraft Category:</b>	Airplane
<b>Year of Manufacture:</b>		<b>Amateur Built:</b>	No
<b>Airworthiness Certificate:</b>	Utility	<b>Serial Number:</b>	D-8660
<b>Landing Gear Type:</b>	Retractable - Tricycle	<b>Seats:</b>	6
<b>Date/Type of Last Inspection:</b>	02/14/2013, Annual	<b>Certified Max Gross Wt.:</b>	3400 lbs
<b>Time Since Last Inspection:</b>	150 Hours	<b>Engines:</b>	1 Reciprocating
<b>Airframe Total Time:</b>	6115 Hours as of last inspection	<b>Engine Manufacturer:</b>	Continental Motors
<b>ELT:</b>	C91A installed, not activated	<b>Engine Model/Series:</b>	IO520BA
<b>Registered Owner:</b>	On file	<b>Rated Power:</b>	285 hp
<b>Operator:</b>	On file	<b>Operating Certificate(s) Held:</b>	None

The accident airplane, a 1967 Beech V35A, was registered to the pilot and equipped with a Continental IO-520BA engine, serial number 814377-R. The last annual inspection recorded in maintenance logbooks occurred on February 14, 2013, with 6,115 total airframe hours and 626 hours since last engine overhaul.

Since 2009, the airplane was equipped with a Garmin G-600 Integrated Flight Display System, a King KFC-200 autopilot, dual Garmin GNS-430W integrated GPS navigation

receiver/communications transceivers, and a Garmin GDL-69A XM radio/weather receiver. On September 16, 2013, a Garmin GDL-88 ADS-B transceiver was installed.

## Meteorological Information and Flight Plan

<b>Conditions at Accident Site:</b>	Instrument Conditions	<b>Condition of Light:</b>	Night/Dark
<b>Observation Facility, Elevation:</b>	KHQZ, 447 ft msl	<b>Distance from Accident Site:</b>	8 Nautical Miles
<b>Observation Time:</b>	1825	<b>Direction from Accident Site:</b>	360°
<b>Lowest Cloud Condition:</b>		<b>Visibility</b>	4 Miles
<b>Lowest Ceiling:</b>	Overcast / 600 ft agl	<b>Visibility (RVR):</b>	
<b>Wind Speed/Gusts:</b>	4 knots /	<b>Turbulence Type Forecast/Actual:</b>	/ None
<b>Wind Direction:</b>	20°	<b>Turbulence Severity Forecast/Actual:</b>	/
<b>Altimeter Setting:</b>	30.16 inches Hg	<b>Temperature/Dew Point:</b>	8° C / 7° C
<b>Precipitation and Obscuration:</b>	Mist; No Precipitation		
<b>Departure Point:</b>	El Dorado, AR (KELD)	<b>Type of Flight Plan Filed:</b>	IFR
<b>Destination:</b>	Mesquite, TX (KHQZ)	<b>Type of Clearance:</b>	IFR
<b>Departure Time:</b>	1535 CST	<b>Type of Airspace:</b>	Air Traffic Control; Class E

At 1825, the weather observation station at HQZ, located about 8 miles north of the accident site, reported wind from 020 degrees at 4 knots, visibility 4 miles, mist, overcast clouds at 600 ft above ground level (agl), temperature 8 degrees C, dew point 7 degrees C, altimeter setting 30.16. Astronomical data obtained from the United States Naval Observatory for the accident site indicated that sunset time was 1723.

At 1520, the pilot received an official weather briefing from Lockheed Martin Flight Service (LMFS) via the ForeFlight.com website. The weather briefing contained standard weather information in text format. An Airmen's Meteorological Information (AIRMET) valid at the accident time forecast instrument flight rules (IFR) conditions, with ceiling below 1,000 ft agl and visibility below 3 miles in precipitation and mist. The full LMFS briefing and NTSB weather study are located in the docket for this investigation.

## Airport Information

<b>Airport:</b>	Mesquite Metro Airport (HQZ)	<b>Runway Surface Type:</b>	Concrete
<b>Airport Elevation:</b>	447 ft	<b>Runway Surface Condition:</b>	
<b>Runway Used:</b>	35	<b>IFR Approach:</b>	Global Positioning System; RNAV
<b>Runway Length/Width:</b>	5999 ft / 100 ft	<b>VFR Approach/Landing:</b>	None

## Wreckage and Impact Information

<b>Crew Injuries:</b>	1 Fatal	<b>Aircraft Damage:</b>	Destroyed
<b>Passenger Injuries:</b>	N/A	<b>Aircraft Fire:</b>	None
<b>Ground Injuries:</b>	N/A	<b>Aircraft Explosion:</b>	None
<b>Total Injuries:</b>	1 Fatal	<b>Latitude, Longitude:</b>	32.615000, -96.542500

The airplane impacted terrain in a nose low, right wing down attitude and the engine impacted 28 feet beyond the initial impact point, creating a 4 ft deep crater. The aircraft tumbled and separated into multiple pieces. The fuselage came to rest 110 feet beyond the initial impact point.

Flight control cable continuity for the elevator and rudder controls was confirmed from the tail surfaces to the forward carry through spar. Aileron flight control cable continuity was confirmed from the forward carry through spar to the wing bellcranks. One of the right aileron cables had separated in tension overload. Damage to the remainder of the control cable system precluded its examination.

The primary digital flight display and line replaceable units that provide data to the displays were fractured into multiple pieces. The face plates of two analog altimeters displayed the correct altimeter setting. The standby attitude indicator gyro rotor was removed from its indicator and exhibited rotation scoring on the rotor and the housing.

The three propeller blades remained attached to the propeller hub, which was inside the crater created by the engine. One propeller blade exhibited "S" type bending, the second blade was bent aft, and the third blade appeared straight.

During recovery of the engine from the crater, impact damage included a breach in the crankcase. The crankshaft was broken, with the propeller flange remaining attached to the separated propeller hub. The induction system was destroyed by impact forces and the throttle body was broken into several small pieces. The throttle arm remained secured to the throttle body shaft, with the attaching nut in place to secure the throttle arm.

All fuel tanks were breached due to impact forces. The fuel manifold diaphragm was intact. The fuel screen was clear of debris, with no fuel found. Examination of the airframe and engine revealed no evidence of mechanical malfunctions or failures that would have precluded normal operation.

## Medical And Pathological Information

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On December 19, 2014, an autopsy was performed on the pilot by the Dallas County Institute of Forensic Sciences. The cause of death was blunt force injuries. The FAA's Civil Aeromedical Institute in Oklahoma City, Oklahoma performed toxicology tests on the pilot. Medical evaluation was limited by the degree of injury to the body. The brain, heart, and kidneys were not available for examination and there was no blood, vitreous, or urine available for toxicology or clinical testing. Ethanol was identified in the liver, but not in muscle. Diphenhydramine was identified in both liver and muscle.

Diphenhydramine is a sedating antihistamine used to treat allergy symptoms and is a sleep aid. It is available over the counter under the trade names Benadryl and Unisom. Diphenhydramine carries the following warning: may impair mental and/or physical ability required for the performance of potentially hazardous tasks (e.g., driving, operating heavy machinery).

## Tests And Research

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Data from the engine monitor was downloaded and plotted. The airplane's fuel flow of 27 gallons per hour (gph), consistent with takeoff power, was observed towards the start of the recording. A similar fuel flow was observed four times throughout the event flight at 17:10:42, 17:26:12, 18:00:24, and 18:07:48. At 18:13:12, the fuel flow dropped to an average of 7 gph, consistent with low power, for the duration of the recording.

## Additional Information

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The airplane was configured with two main and two tip fuel tanks with a capacity of 40 gallons and 20 gallons each, respectively. The refueling lineman stated that he added 16 gallons of fuel and was not able to visually sight any fuel in either main tank, consistent with about 44 gallons of fuel or less on board. Data from the engine monitor indicated that 44.4 gallons of fuel had been consumed at the time of the accident.

The United States Air Force conducted a GPS performance analysis for the time period of the accident. No indications of a loss or degradation of the GPS signal in the accident area were present.

## Administrative Information

<b>Investigator In Charge (IIC):</b>	Michael J Folkerts	<b>Report Date:</b>	09/22/2016
<b>Additional Participating Persons:</b>	Chris Doherty; Flight Standards District Office; North Texas, TX Mike Council; Continental Motors; Mobile, AL Henry Soderlund; Textron Aviation; Wichita, KS		
<b>Publish Date:</b>	09/22/2016		
<b>Note:</b>	The NTSB traveled to the scene of this accident.		
<b>Investigation Docket:</b>	<a href="http://dms.nts.gov/pubdms/search/dockList.cfm?mKey=90513">http://dms.nts.gov/pubdms/search/dockList.cfm?mKey=90513</a>		

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The Independent Safety Board Act, as codified at 49 U.S.C. Section 1154(b), precludes the admission into evidence or use of any part of an NTSB report related to an incident or accident in a civil action for damages resulting from a matter mentioned in the report. A factual report that may be admissible under 49 U.S.C. § 1154(b) is available [here](#).