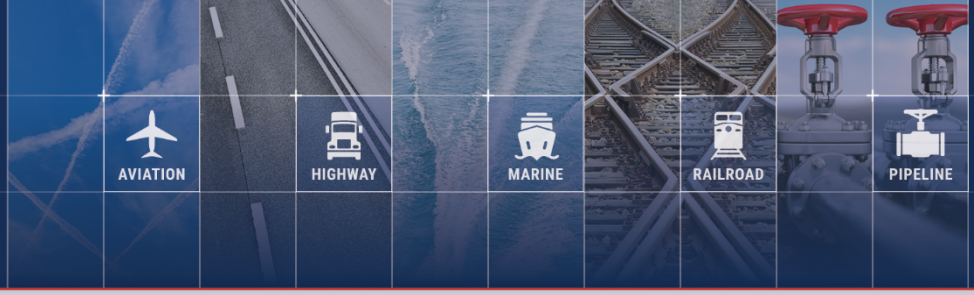

Aviation Investigation Final Report

Location:	Junction, Texas	**Accident Number:**	CEN14FA051
Date & Time:	November 12, 2013, 09:45 Local	**Registration:**	N38LH
Aircraft:	Cessna T310R	**Aircraft Damage:**	Destroyed
Defining Event:	VFR encounter with IMC	**Injuries:**	2 Fatal
Flight Conducted Under:	Part 91: General aviation - Personal		

Analysis

The noninstrument-rated private pilot departed on a cross-country flight without obtaining a weather briefing from a flight service station or the Direct User Access Terminal System, and he did not communicate with air traffic control during the flight. Existing weather advisories for instrument flight rules conditions along the intended route of flight had been issued. Radar data was not available for the flight due to antenna site locations, so the airplane's flight path and flight altitudes could not be determined. Witnesses near the accident site reported overcast skies, fog, drizzle, and windy weather conditions. They also reported hearing sounds consistent with an airplane circling and then sounds consistent with a rapid descent followed by the sound of an impact. Postaccident examination revealed damage and fragmentation to the airplane consistent with a nose-low attitude and high velocity at the time of impact. Weather observations and satellite imagery showed that a layer of overcast clouds was present over the accident site with a base at about 800 feet above ground level (about 2,600 feet mean sea level) and tops at about 9,500 feet mean sea level. It is likely that the pilot encountered instrument meteorological conditions and subsequently lost control of the airplane.

Probable Cause and Findings

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

The noninstrument-rated private pilot's decision to continue a visual flight rules flight into instrument meteorological conditions, which resulted in the loss of airplane control. Contributing to the accident was the pilot's failure to obtain a weather briefing before departure.

Findings

Personnel issues	Aircraft control - Pilot
Personnel issues	Total instrument experience - Pilot
Personnel issues	Decision making/judgment - Pilot
Environmental issues	Below VFR minima - Effect on personnel
Personnel issues	Weather planning - Pilot

Factual Information

History of Flight

Enroute	VFR encounter with IMC (Defining event)
Enroute	Loss of control in flight
Uncontrolled descent	Collision with terr/obj (non-CFIT)

On November 12, 2013, about 0945 central standard time, a Cessna T310R, N38LH, was destroyed when it impacted terrain near Junction, Texas. A postimpact fire ensued. The non-instrument rated private pilot and his passenger were fatally injured. The airplane was registered to and operated by the pilot under the provisions of 14 Code of Federal Regulations Part 91 as a personal flight. Instrument meteorological conditions prevailed in the area and the flight operated without a flight plan. The flight departed Giddings-Lee County Airport (KGYB), Giddings, Texas, approximately 0830 and was en route to Sonora Municipal Airport (KSOA), Sonora, Texas.

Several witnesses located at the Texas Tech University campus, on the west side of Junction, Texas, heard the accident airplane. One witness described the airplane and engine noise being consistent with the airplane flying in circles. Another witness stated that the airplane sounded like it was very low and moving quickly. Several witnesses heard the engine noise increase like the airplane was descending followed by a loud boom or the sound of an impact.

Only one witness reported seeing the airplane prior to the accident. This witness looked in the direction of the engine noise and observed the airplane for only a few seconds before it impacted the ground. The other witnesses reported seeing low clouds and fog which hindered them from seeing the airplane that was making the noise. The witnesses reported seeing black smoke followed by white smoke which quickly dissipated due to the winds.

The pilot did not communicate with air traffic control during the flight. Radar data for the accident flight was not available due to antenna site locations.

Pilot Information

Certificate:	Private	**Age:**	39
Airplane Rating(s):	Single-engine land; Multi-engine land	**Seat Occupied:**	Unknown
Other Aircraft Rating(s):	None	**Restraint Used:**	Unknown
Instrument Rating(s):	None	**Second Pilot Present:**	No
Instructor Rating(s):	None	**Toxicology Performed:**	Yes
Medical Certification:	Class 3 Without waivers/limitations	**Last FAA Medical Exam:**	June 27, 2013
Occupational Pilot:	No	**Last Flight Review or Equivalent:**	September 19, 2013
Flight Time:	(Estimated) 410 hours (Total, all aircraft), 16 hours (Total, this make and model)		

The pilot, age 39, held a private pilot certificate with airplane single and multiengine ratings last issued on September 19, 2013. He was issued a third class airman medical certificate without limitations on June 27, 2013.

The pilot's logbook was found within the wreckage. A review of the logbook indicated that the pilot had logged no less than 410 hours in airplanes, 16 hours of which were logged in multiengine airplanes, and 16 hours in the same make and model of the accident airplane. The pilot had logged 3 hours of simulated instrument experience over two days in July 2006 as part of the pilot's private pilot training. These 3 hours were logged in a single engine Cessna 172.

According to training records obtained from American Flyers in Addison, Texas, the pilot started flight training for a multiengine rating on July 29, 2013. He obtained both ground and flight training from American Flyers and successfully completed his checkride on September 19, 2013. At the time of his checkride, he had logged 11.5 hours in multiengine airplanes.

Aircraft and Owner/Operator Information

Aircraft Make:	Cessna	**Registration:**	N38LH
Model/Series:	T310R	**Aircraft Category:**	Airplane
Year of Manufacture:	1980	**Amateur Built:**	
Airworthiness Certificate:	Normal	**Serial Number:**	310R1886
Landing Gear Type:	Retractable - Tricycle	**Seats:**	
Date/Type of Last Inspection:	January 1, 2013 Annual	**Certified Max Gross Wt.:**	5501 lbs
Time Since Last Inspection:		**Engines:**	2 Reciprocating
Airframe Total Time:		**Engine Manufacturer:**	CONT MOTOR
ELT:		**Engine Model/Series:**	TSIO-520-EB
Registered Owner:	On file	**Rated Power:**	300 Horsepower
Operator:	On file	**Operating Certificate(s) Held:**	None

The accident airplane, a Cessna T310R (serial number 310R1886), was manufactured in 1980. It was registered with the Federal Aviation Administration on a standard airworthiness certificate for normal operations. Two Teledyne Continental Motors TSIO-520-EB engines rated at 300 horsepower at 2,700 rpm, with RAM Aircraft conversions, powered the airplane. Both engines were equipped with a 3-blade, Hartzell propeller.

The airplane was registered to and operated by the pilot, and was maintained under an annual inspection program. The pilot purchased the airplane and registered it with the FAA in July of 2013. The maintenance records were not located during the investigation. When the pilot purchased the airplane, it had a total airframe time of 3,986 hours; 769 hours since the RAM 300 HP conversion had been completed, and 54 hours since the ECi Cerminil cylinders had been installed. According to sales documents, the annual inspection had been completed in January of 2013.

Meteorological Information and Flight Plan

Conditions at Accident Site:	Instrument (IMC)	**Condition of Light:**	Day
Observation Facility, Elevation:	JCT,1754 ft msl	**Distance from Accident Site:**	2 Nautical Miles
Observation Time:	09:51 Local	**Direction from Accident Site:**	
Lowest Cloud Condition:	Thin Overcast / 800 ft AGL	**Visibility**	8 miles
Lowest Ceiling:	Overcast / 800 ft AGL	**Visibility (RVR):**	
Wind Speed/Gusts:	9 knots /	**Turbulence Type Forecast/Actual:**	/
Wind Direction:	40°	**Turbulence Severity Forecast/Actual:**	/
Altimeter Setting:	30.57 inches Hg	**Temperature/Dew Point:**	8°C / 6°C
Precipitation and Obscuration:	No Obscuration; No Precipitation		
Departure Point:	Giddings, TX (KGYB)	**Type of Flight Plan Filed:**	None
Destination:	Sonora, TX (KSOA)	**Type of Clearance:**	None
Departure Time:	08:30 Local	**Type of Airspace:**	Unknown

Infrared satellite imagery of south central Texas displayed overcast clouds directly over the accident site. The image depicted generally uniform cloud tops from KGYB to the accident location with cloud top heights around 6,500 feet mean sea level (msl). The cloud tops around the accident site were around 9,500 feet msl. Doppler weather radar did not depict precipitation returns in the area at the time of the accident.

The National Weather Service (NWS) had issued AIRMET (Airman's Meteorological Information) TANGO for moderate turbulence below 8,000 feet along the route of flight.

AIRMET SIERRA for ceilings below 1,000 feet, visibility below 3 statute miles in precipitation and mist existed for the portion of the flight from Austin, to the west along the remainder of the accident flight route. These conditions were forecast to end between 1200 and 1500 on the day of the accident.

The closest official weather observation station was Kimble County Airport (KJCT), Junction, Texas, located 2.4 nautical miles (nm) northeast of the accident site. The elevation of the weather observation station was 1,754 feet msl. The routine aviation weather report (METAR) for KJCT, issued at 0851, approximately one hour prior to the accident, reported wind 020 degrees at 16 knots, gusting to 22 knots, visibility 6 miles in mist, sky condition overcast clouds at 800 feet, temperature 09 degrees Celsius (C), dew point temperature 08 degrees C, altimeter 30.53 inches.

The METAR for KJCT at 0951 reported wind 040 at 9 knots, visibility 8 miles, sky condition, overcast at 800 feet, temperature 08 degrees C, dew point 06 degrees C, altimeter 30.58 inches.

The METAR for KSOA (the destination airport), issued at 0935 reported wind 020 degrees at 24 knots gusting to 28 knots, visibility 10 miles, sky condition overcast clouds at 800 feet, temperature 07 degrees C, dew point 04 degrees C, altimeter 30.60 inches.

There was no record that the pilot obtained a weather briefing from the FAA Flight Service Station or Direct User Access Terminal System (DUATS). It could not be determined which resources were used by the pilot prior to the flight.

Wreckage and Impact Information

Crew Injuries:	1 Fatal	**Aircraft Damage:**	Destroyed
Passenger Injuries:	1 Fatal	**Aircraft Fire:**	None
Ground Injuries:	N/A	**Aircraft Explosion:**	None
Total Injuries:	2 Fatal	**Latitude, Longitude:**	30.483055,-99.796943

The accident scene was located in hilly, rocky, forested terrain, 1.3 nautical miles southwest of Junction, Texas. The terrain was vegetated with coniferous cedar trees. The wreckage was located at an elevation of 2,000 feet msl, and the wreckage and debris was distributed along a heading of 121 degrees.
The initial impact point was located at the top of a cedar tree. Damage to the branches at the top of the tree was oriented at an angle of between 50 and 60 degrees relative to the horizon. A second impact point and the first ground scar were located directly to the east and beneath the cedar tree. Plastic, fiberglass, and metal were located within this initial ground scar, consistent with the empennage of the airplane.

A large ground scar and debris field continued to the east towards larger sections of the airplane. The main portion of the debris field extended to the east for 475 feet. Trees, tree limbs, and branches were broken in the direction of impact and were scattered along the debris field.

The right fuel tank was located to the north of the debris field. Broken, fragmented, crushed, and torn metal consistent with the aileron, flap, and wing were found in line with the fuel tank to the north of the debris field. The metal was crushed, fragmented, and exhibited exposure to heat and fire.

Broken, fragmented, crushed, and torn metal consistent with the left elevator, left aileron, and left tip tank were located on south side of the debris field. The metal exhibited exposure to heat and fire.

Fragmented metal from the fuselage and rudder, torn insulation, wire bundles, and engine components were located periodically, at various intervals along the debris field. The nose landing gear, upper inboard wing skin, one main landing gear assembly (wheel, tire, and strut), and portions of a propeller blade were located on the north side of the debris field to the east of the initial impact point. The metal exhibited exposure to heat and fire.

A propeller assembly which included two blades and remained attached at the propeller hub, came to rest adjacent to a tree further in the debris field. One engine also separated from the airplane and was located in the debris field. The engine exhibited impact and fire damage.

A wooden post and barbed wire fence ran from north to south, intersecting the debris field. Debris

continued past the fence to the east including one propeller blade, several cylinders, fragmented portions of the engine and crankshaft, main landing gear tire, wheel and strut, and fragmented engine components. The components exhibited impact and fire damage.

Medical and Pathological Information

An autopsy of both occupants was performed by the Central Texas Autopsy on November 13, 2013, as authorized by the Kimble County Justice of the Peace. The autopsies concluded that the cause of death was multiple blunt force injuries and the report listed the specific injuries.

The FAA's Civil Aerospace Medical Institute (CAMI), Oklahoma City, Oklahoma, performed toxicological tests on specimens that were collected during the autopsy (CAMI Reference #201300223001 and 201300223002). Tests for carbon monoxide and cyanide were not performed. Results were negative for volatiles and drugs.

Tests and Research

The wreckage was recovered and relocated to a storage facility in Lancaster, Texas. The airframe and both engines were fragmented. The pieces of wing and stabilizer exhibited fore to aft accordion crushing along the entire span. Due to the impact and fire damage, investigators were unable to confirm control continuity. All separation points were consistent with overstress and impact damage.

Due to impact and fire damage, investigators were unable to confirm the condition of either engine prior to the accident. The propeller blades were bent, bowed, curled, twisted and exhibited significant scoring along the entire span of the blade. The leadings edges of the blades were missing pieces and sections. The blades on both turbocharger assemblies were bent opposite the direction of rotation and exhibited damage consistent with rotation at the time of impact.

The instrument panel was fragmented and the instruments did not provide any reliable readings. Investigators were not able to determine the functional condition of the vacuum system or related instruments. The vacuum pumps were impact damaged.

Additional Information

According to several sources, the pilot had recently purchased the airplane and always flew with either a flight instructor or a family member who was also a pilot. On the day of the

accident, the pilot was supposed to fly with that family member; however, the family member was unable to join the pilot for the flight.

Administrative Information

Investigator In Charge (IIC):	Rodi, Jennifer
Additional Participating Persons:	Carlos F Gallardo; Federal Aviation Administration; San Antonio, TX Peter Basile; Cessna Aircraft Company; Wichita, KS Chris Lang; Continental Motors Inc; Mobile, AL Rick Roper; RAM Aircraft, LP; Waco, TX
Original Publish Date:	January 20, 2015
Last Revision Date:	
Investigation Class:	Class
Note:	The NTSB traveled to the scene of this accident.
Investigation Docket:	https://data.ntsb.gov/Docket?ProjectID=88419