
		NTSB ID: CHI01FA206		Aircraft Registration Number: N91WC	
		Occurrence Date: 07/13/2001		Most Critical Injury: Fatal	
		Occurrence Type: Accident		Investigated By: NTSB	
Location/Time					
Nearest City/Place CARTERVILLE		State MO	Zip Code 64835	Local Time 0057	Time Zone CDT
Airport Proximity: Off Airport/Airstrip		Distance From Landing Facility: 3			
Aircraft Information Summary					
Aircraft Manufacturer Beech		Model/Series E-55		Type of Aircraft Airplane	
Revenue Sightseeing Flight: No			Air Medical Transport Flight: No		
Narrative					
Brief narrative statement of facts, conditions and circumstances pertinent to the accident/incident:					
HISTORY OF FLIGHT					
<p>On July 13, 2001, at 0057 central daylight time, a Beech E-55, N91WC, twin-engine airplane, piloted by a commercial pilot, was destroyed after it departed controlled flight and impacted into a garage in a residential area of Carterville, Missouri, 3 miles east of the Joplin Regional Airport (JLN), Joplin, Missouri. Prior to the crash, the airplane lost power on one engine. Instrument meteorological conditions prevailed at the time of the accident. The personal flight was being conducted under the provisions of 14 CFR Part 91. The airplane departed Sulphur, Louisiana, on July 12, 2001, at approximately 2230, without a flight plan on file. On reaching the Joplin area, the commercial pilot filed an instrument flight rules (IFR) plan with the Kansas City Air Route Traffic Control Center (ZKC). The cross-country flight was to terminate at Joplin, Missouri. The pilot and five passengers on board sustained fatal injuries in the crash. There were no injuries to persons on the ground.</p>					
<p>At 0011:38, ZKC established radio contact with N91WC. The pilot informed ZKC that he was going to start a slow descent into the Joplin airport. ZKC asked the pilot if he had the current weather for landing. The pilot said, "negative". ZKC informed the pilot that the weather at JLN was winds 050 degrees at 7 knots, 10 miles visibility, ceilings of 800 feet broken and 5,000 feet overcast, and an altimeter of 29.99 inches of Mercury (Hg). The pilot responded that they were going to need an IFR approach into JLN. ZKC cleared N91WC direct to JLN and told them to maintain 4,000 feet mean sea level (msl).</p>					
<p>At 0017:25, ZKC inquired, [N91WC] "are you heading over towards joplin now?" The pilot said his global positioning system (GPS) equipment was showing he was heading direct to JLN. ZKC asked the pilot what heading he was on. The pilot responded, "forty two degrees." ZKC said, "ok yeah that ought to be good if you turn right to uh about a zero three five zero four zero heading that'll take you direct joplin looked like you were heading to the north there looked like you were heading straight north."</p>					
<p>At 0018:05, the pilot inquired, "and what kind of approach we gonna make?" ZKC said, "it'll be approach of your choice they've got i l s they've got uh back course uh just let me know what you want to do i can vector you for i l s if you want."</p>					
<p>The pilot said, "i've got the approach plate out now for the i l s uh one eight." ZKC said, "all right turn uh fifteen degrees left vectors i l s uh you say you want to do i l s one eight?" The pilot said, "i guess that'll do." ZKC then said, "ok they got vectors uh they've got the i l s one three or one eight it'll be your choice uh."</p>					
<p>After rechecking the winds, the pilot told ZKC, "i guess we'll uh let me see if i got that one approach plate."</p>					
FACTUAL REPORT - AVIATION					
Page 1					

 <p>National Transportation Safety Board <b>FACTUAL REPORT</b> AVIATION</p>	NTSB ID: CHI01FA206
	Occurrence Date: 07/13/2001
	Occurrence Type: Accident

## Narrative (Continued)

At 0021:50, the pilot said, uh center one whiskey charlie i've got that approach plate out now." ZKC told the pilot, "ok thank you and uh turn fifteen degrees left vectors i l s runway one three into joplin fifteen left."

At 0028:35, ZKC told the pilot, "november niner one whiskey charlie turn right heading one zero zero one hundred on the heading." The pilot responded, "one zero zero roger."

At 0029:30, ZKC told the pilot, "november one whiskey charlie continue right turn heading one three zero you're eight miles north west of lunns intersection then maintain three thousand two hundred until established cleared i l s runway one three into joplin over." The pilot responded, "one whiskey charlie roger."

At 0030:22, ZKC asked the pilot, "and one whiskey charlie are you on the localizer inbound now?" The pilot responded, "one whiskey charlie doesn't show uh it on." ZKC said, "all right turn uh let's go fifteen left you may have turned a little tight left to join i'll let you know when you're on it."

At 0031:14, the pilot said, "we show on the localizer now." ZKC said, "all right one whiskey charlie you're cleared i l s one three into joplin thirty two hundred."

At 0031:35, the pilot said, "... i just got a red flag on this localizer uh center one whiskey charlie." ZKC said, "all right you say you're not getting it in now." The pilot responded, "uh got a red flag on the nav here". ZKC asked the pilot, "... you want to try another approach there something else then?" The pilot said, "i've lost uh the localizer and glide slope both i guess i ought to go over there and try that one eight". ZKC said, "... we can vector you up there ... maintain your present altitude ... you can climb up to four thousand ... vectors for the i l s runway one eight and let's turn left heading zero three zero take you in from the east side there."

At 0033:46, ZKC asked, "you say you still got plenty of fuel you say you got two hours fuel there?" The pilot responded, "uh yes sir."

At 0038:51, ZKC told the pilot, "uh you can turn left now head to the north heading three six zero." The pilot responded, "left three six zero." ZKC told the pilot, "we'll take you up here about ten miles turn you back in on the localizer one eight."

At 0041:14, ZKC told the pilot, "november nine one whiskey charlie turn left heading two seven zero." The pilot responded, "left two seven zero roger." At 0042:06, ZKC told the pilot, "... continue left turn heading of two zero zero two hundred on the heading." The pilot acknowledged.

At 0042:30, ZKC told the pilot, "... you're one three miles north of the airport heading of one ninety maintain three thousand two hundred until established cleared i l s runway one eight into joplin you should be joining here in half a mile or so."

At 0045:11, ZKC said, "one charlie whiskey i show you right on the localizer now inbound do you concur with that." The pilot said, "well it's showing slightly left to our left."

At 0045:36, ZKC said, "and one whiskey charlie say your altitude radar contact is lost." The pilot said, "one whiskey charlie two thousand seven hundred descending." ZKC said, "roger and are you established now." The pilot said, "uh i'm about a needle width to the uh left i mean to the uh right of course."

At 0046:36, ZKC asked the pilot, "are you established inbound yet?" The pilot said, "we're close."

At 0047:27, the pilot said, "uh we're showing 2,500 feet."

National Transportation Safety Board

## FACTUAL REPORT

AVIATION

NTSB ID: CHI01FA206

Occurrence Date: 07/13/2001

Occurrence Type: Accident

## Narrative (Continued)

At 0047:53, ZKC told the pilot, uh one whiskey charlie radar contact is lost change to advisory approved cancel out this frequency if unable you need to cancel out through radio."

At 0048:40, ZKC said, "and november one whiskey charlie if you're still with the center can hear me i show you just about over the airport twenty four hundred feet."

At 0048:47, the pilot said, "uh one whiskey charlie we're going to make a missed approach and go try it again uh never could get the runway lights on i don't think."

At 0050:55, ZKC asked, "ok do you want to try another approach there what kind do you want to try?"

The pilot said, "well we'll try that one more time see if we can get down through it." ZKC said, "nine one whiskey charlie roger you can climb and maintain four thousand you're radar contact a mile south of the joplin airport four thousand left heading zero two zero vectors for the i l s runway one eight again." The pilot responded, "that's a left zero two zero you say." ZKC said, "yeah we'll head you up to the northeast again of zero two zero vectors for the i l s runway one eight. The pilot acknowledged.

At 0055:06, ZKC said, "and one whiskey charlie center." There was no response.

At 0055:13, ZKC said, "november nine one whiskey charlie center."

At 0055:16, the pilot said, "one whiskey charlie we're having a little problem here i think we've lost an engine i'm trying to get leveled off here and get back up to four thousand feet." ZKC told the pilot, "one whiskey charlie roger just keep me advised."

At 0056:06, ZKC said, "november nine one whiskey charlie i show you descending below the minimum safe altitude two thousand three hundred over." There were no further transmissions from N91WC.

The last position recorded by ZKC radar for N91WC showed the airplane 3 miles east of JLN in a descent.


Several witnesses in Carterville, Missouri, heard the airplane flying in the area beginning approximately 0015. One witness said he heard the airplane going east, then west, and then back east again. The witness said that when he heard the airplane travel east the second time, it sounded like a single-engine airplane. The witness also said it sounded like the airplane was "awful low".

Another witness saw the airplane just before the accident. She said she could see the lights on the airplane. The witness described the airplane pitch up into a 30-degree nose high climb, roll counterclockwise, and then enter a 45-degree dive toward the ground. The airplane continued its counterclockwise roll until she lost sight of it behind some trees.

A witness in the residence across the street (west) of the garage the airplane struck said he heard the airplane. "It sounded like a nosedive barrel roll. It was loud and fast." The witness said, "It sounded like a loud engine running and it sounded like one engine, not two." The witness said he was heading for his front door when the airplane hit. He said the impact knocked him to the floor. The witness said he got up, opened his front door and saw the tail of the airplane in his yard. The witness' wife said that their house started to shake just before the airplane hit. She said the impact was loud and that she had never heard anything like it before in her life.

## PERSONNEL INFORMATION

The 70 year old pilot held a commercial pilot certificate with ratings for single-engine and multi-engine, instrument airplanes, issued on February 24, 1999. The pilot also held a flight

 <p>National Transportation Safety Board <b>FACTUAL REPORT</b> AVIATION</p>	NTSB ID: CHI01FA206
	Occurrence Date: 07/13/2001
	Occurrence Type: Accident

## Narrative (Continued)

instructor certificate with provisions to instruct in single-engine and multi-engine instrument airplanes. The pilot's instructor pilot certificate was due for renewal on April 30, 2002. Additionally, the pilot held a ground instructor's certificate and a control tower operator's certificate.

According to his personal logbook, as of May 26, 2001, the pilot had 6,823.8 total flying hours. Approximately 1,440 hours were in multi-engine airplanes. The pilot's last recorded flight in a multi-engine airplane was on October 26, 2000, in a Cessna 337. The pilot's logbook showed within the 90 days preceding the accident flight, the pilot recorded 4.3 hours of night time. The logbook showed in the 6 months preceding the accident flight, the pilot recorded 4.8 hours simulated instrument time and 1.8 hours actual instrument time. Between December 18, 2000 and May 26, 2001, the pilot flew 9 instrument approaches. The approach flown on May 26, 2001, was an ILS. The pilot completed a biennial flight review on April 17, 2000.

The pilot held a second-class medical certificate dated June 27, 2001. The certificate cited the following limitations: "must wear lenses for distant - possess glasses for near vision, limited second class/full third class privileges, and miscellaneous restriction assigned."

The pilot's aeromedical records showed he underwent coronary bypass surgery on July 24, 1998. The pilot regained his medical certificate on June 11, 1999. The pilot also suffered from asthma, a condition that predated his heart problems.

The previous owner of the airplane said that she thought the pilot got his checkout in the airplane on July 7, 2001.

## AIRCRAFT INFORMATION

The airplane, serial number TE-909, was manufactured in 1973. It was white in color with light and dark blue stripes on the fuselage, vertical stabilizer and wing tips. The airplane had been recently purchased by a businessman who was one of the passengers on board at the accident. Previously, the airplane was owned by the president of an engineering company and was used for that company's business purposes. The previous owner said the airplane was purchased by the new owner around June 27, 2001. The previous owner said that the current owner had in his possession the bill of sale and the paperwork to submit to the Federal Aviation Administration (FAA). The airplane had an annual inspection performed on October 14, 2000. The airplane had a Hobbs meter time of 1,590.6 hours and a total airframe time of 3,388.4 hours at the annual inspection. The Hobbs time recorded at the accident was 1,597.7 hours.


The airplane was equipped with instrument landing system equipment, distance measuring equipment, a localizer receiver, and a global positioning satellite (GPS) receiver.

## METEOROLOGICAL INFORMATION

At 0055, the automated weather observing system at JLN, located 3.4 miles west of the accident site, recorded an overcast ceiling of 800 feet above ground level, 10 miles visibility, temperature 70 degrees Fahrenheit (F), dew point 68 degrees F, winds 060 degrees at 7 knots, and altimeter 30.00 inches Hg.

## AIDS TO NAVIGATION

The published initial approach fix for the ILS/DME approach to runway 18 at JLN is MITBY intersection, 9.7 nautical miles (nm) from the end of the runway. The final approach course for the localizer is 178 degrees. The glide slope can be intercepted at MITBY at an altitude of 3,000 feet msl. A step down altitude of 2,500 feet msl is published for the localizer. The final approach fix for the localizer is 4.7 nm from the end of the runway. The altitude at the final

 <p>National Transportation Safety Board <b>FACTUAL REPORT</b> AVIATION</p>	NTSB ID: CHI01FA206
	Occurrence Date: 07/13/2001
	Occurrence Type: Accident

## Narrative (Continued)

approach fix is 2,500 feet msl. The minimum descent altitude for the localizer is 1,340 feet msl (375 feet height above airdrome). The decision height (minimum descent altitude) for the ILS approach is 1,165 feet msl (200 feet height above touchdown). The published minimum safe altitude for the approach is 3,100 feet within a 25 nm radius of the outer marker for runway 13, is 3.7 nautical miles northwest of the field on a 314-degree heading.

## AIRPORT INFORMATION

Runway 18 at JLN is equipped with a medium intensity approach lighting system (MALSR) with runway alignment indicator lights and sequenced flashing lights. The runway is also equipped with a precision approach path indicator (PAPI) lighting system. Both the MALSR and PAPI systems are pilot controlled (PCL).

According to the airport manager, the JLN air traffic control tower opens at 0600 and closes at 2100. The runway lights are turned on when it gets dark and remain on all night. Before the tower closes, tower personnel check the pilot controlled lights. The lights operate on the common traffic advisory frequency of 119.8 megahertz. By clicking the microphone button several times, a pilot can increase the brightness intensity of the runway lights from low to medium, and medium to high.

The airport manager said he received notification of the accident at 0104. The manager said that ZKC told him that the pilot told them that he could not get the lights to come on. The manager said he told ZKC that the lights were on. The airport manager said when he arrived at the airport he noticed the airport lights and the beacon were on. He said he used his radio to click up the PCL. The medium and high intensity settings worked. The airport manager said he checked the lighting at the approach end of runway 31. He said he could see the visual lighting to runway 18. Everything was working.

At 0400, field sector inspectors from the FAA arrived and inspected the navigation equipment and the airport lighting. Everything was found operational.

## WRECKAGE AND IMPACT INFORMATION

The National Transportation Safety Board on-scene investigation began on July 13, 2001, at 1245.

The accident site was located in a residential area located in the 400 block of Cedar Street in Cartersville, Missouri. The site began at a garage on the north side of a house at 421 Cedar Street, continued along a 229-degree magnetic heading, crossing Cedar Street, continued through the front and side yards of the residence at 418 Cedar Street, continued through the back yard of the residence at 10 Vandella Street, and ending at the yard's west fence; a total distance of 300 feet.

The front half of the garage at 421 Cedar Street was broken downward. The north wall of the garage was broken outward. The collapsed roof over the garage came to rest on top of a car that was parked in the garage. Shingles, truss pieces, insulation, pieces of concrete block, and drywall fanned outward for approximately 70 feet in a 140-degree arc, starting at 225 degrees and circling west and north to 005 degrees.

Approximately 10 feet west of the front of the garage, there was an impact scar in a concrete driveway. The scar measured 17 feet wide, 5 feet long and was 16 inches at its deepest point. The left elevator counterweight and airplane step were found in the impact scar.

The airplane's left propeller was located at the northwest corner of the house's foundation. It was broken torsionally at the base of the flange. The three blades were bent and twisted aft.

A faded-red colored pickup truck, parked along the north side of the driveway, showed a 10-inch

National Transportation Safety Board

## FACTUAL REPORT

AVIATION

NTSB ID: CHI01FA206

Occurrence Date: 07/13/2001

Occurrence Type: Accident

## Narrative (Continued)

wide, 7-inch long, and 5-inch deep dent in the right aft corner of the cab. White parallel paint streaks ran diagonally through the dent. A 4-foot white paint rub was observed on the top rail of the right side bed of the truck.

Approximately 10 feet northwest of the impact scar, there was an 8-foot long section of the airplane's left outboard wing. It was broken longitudinally from leading edge aft to the inboard edge of the aileron. The bottom and leading edge of the wing was bent upward and crushed aft. Several small pieces of wood, similar to the wood in the roof trusses, were embedded in the bottom of the wing skin. The left auxiliary fuel tank was broken open. The left aileron was bent and bucked. Control continuity to the left aileron was confirmed.

Approximately 15 feet southwest of the impact scar, there were the airplane's left engine, engine nacelle, cowling, and left main landing gear. The nacelle was upright and resting on top of a pushed over tree. The nacelle was broken aft longitudinally and crushed. The cowling was broken downward. The left main fuel tank was broken open and fragmented. There was no smell of fuel in the area the left engine nacelle.

Approximately 70 feet from the impact scar along a 229-degree magnetic heading, were the airplane's right engine, right engine mount, and part of the right engine nacelle. The engine was broken aft. A piece of concrete was found embedded in the crankshaft.


Approximately 4 feet south-southwest of the right engine, was a portion of the nose dome. It was broken laterally along the rivet lines. About 10 feet south-southwest of the right engine and 71 feet from the impact scar, was the nose gear, the left flap, some clothing and several personal items. The nose gear strut was broken aft. The nose wheel rim was also broken. The flap was bent and broken.

The airplane's fuselage and empennage rested inverted on the west edge of street and in the front yard of the residence at 418 Cedar Street, approximately 110 feet from the impact scar on a 226-degree magnetic heading. The cockpit and cabin were separated from the fuselage. The remaining top of the airplane was bent inward. The windscreen, pilots' windows, and cabin windows were broken out and fragmented. The window frames were broken aft longitudinally at the cabin roof. The bottom of the fuselage, beginning at the location where the aft cabin wall attaches, was torn open and crushed aft.

The vertical stabilizer was broken downward at the base. The top forward cap of the vertical stabilizer and rotating beacon were broken aft. The rudder remained attached and showed minor damage. The rudder trim tab was deflected to the right 20 degrees. The right horizontal stabilizer was bent aft approximately 75 degrees at the root, and was crushed and broken. The right elevator was broken out. The left horizontal stabilizer and elevator were bent upward approximately 10 degrees, and were bent and buckled rearward. The bottom of the left elevator showed a 9-inch long tear approximately 16 inches outboard of the inboard edge. The elevator trim tab was deflected up 3 degrees. The left outboard edge of the left elevator was broken aft longitudinally along the rivet line. Flight control continuity to the elevators and rudder were confirmed.

Just west of the fuselage in the front yard of 418 Cedar Street was the right main landing gear, gear door, pieces of the right flap, a 4-foot section of nacelle, and a 28-inch long section of wing spar. Also resting in the front yard of 418 Cedar Street, up against the side of the fuselage was the top portion of a tree that was severed through its 4-inch diameter trunk.

The airplane's right wing rested just south of the aft fuselage section. It was broken longitudinally inboard of the nacelle. The wing was bent and broken upward at the fracture. The right position light was broken out. The upper and lower wing skins showed bends and buckles. A 4-foot long, 12-inch wide dull red paint smear was observed on the bottom wing skin beginning near

 National Transportation Safety Board <b>FACTUAL REPORT</b> <b>AVIATION</b>	NTSB ID: CHI01FA206
	Occurrence Date: 07/13/2001
	Occurrence Type: Accident

## Narrative (Continued)

the tip and running inboard. A piece of garage door track rested on top of the wing. The right aileron remained attached, but was bent and buckled. Flight control continuity to the right aileron was confirmed.

Approximately 120 feet from the impact scar, on a 228-degree magnetic heading, rested the right propeller. The three propeller blades were bent aft and twisted. Two of the blades showed 1/8-inch deep nicks along the leading edge. The outer 5 inches of one propeller blade was broken off chordwise. All blades showed chordwise scratches.

Resting next to the right propeller was the cargo door. It was broken out and bent. In a 10-foot area around the right propeller were clothing, papers, pieces of cabin walls and insulation, and broken Plexiglas.

The main cabin door was located 130 feet from the impact scar on a 229-degree heading. The doorframe was bent aft and broken. The door window was broken out and fragmented. The airplane's right propeller spinner was also located in this area. The spinner was broken out, torn open, and showed rotational scoring marks.

A debris field, beginning at the right propeller and cabin door, fanned out along a 229-degree heading for approximately 110 feet. The debris field was 78 feet at its widest point. Within this area were personal effects, logbooks, cabin insulation and cabin interior wall fragments, pieces of fragmented Plexiglas, tree branches, wood shards, fuel lines, seats, and flight instruments.

Two trees along the wreckage path in the debris field showed discolored and shriveled leaves on their lower branches, to approximately 12 feet above the ground.

At the end of the debris field, 229 degrees and 240 feet from the initial impact scar, rested the remainder of the airplane's cabin and forward fuselage. The fuselage section was found resting on the broken top bar of a chain-link fence. The fuselage section was broken open, twisted, and fragmented. The instrument panel and control pedestal were crushed upward and broken. Cabin seats were broken aft. The right main landing gear wheel was resting south of the forward fuselage.

Surviving flight instruments examined at the accident scene showed the following indications:

Airspeed indicator - 170 knots  
 Altimeter - 2,420 feet, Kollsman window - 30.20 inches Hg  
 Attitude indicator - 10 degree right bank turn  
 Radio magnetic indicator needle - 180 degrees  
 Turn and bank indicator - 10 degree left bank turn  
 Vertical speed indicator - 1,900 feet descent

Surviving flight control levers examined at the accident scene were observed in the following positions:

Flap lever - up

Engine control levers examined at the accident scene were observed at the following positions:

Left throttle - midrange  
 Left mixture knob - lean  
 Left propeller lever - midrange  
 Right throttle - midrange  
 Right mixture knob - destroyed  
 Right propeller lever - full forward (low pitch)

A second debris field, beginning at the forward fuselage, spanned the back yard of the residence at 10 Vandella Street, until reaching a second chain-link fence at the west edge of the yard. The second debris field contained the fragmented airplane battery, headsets, a flashlight, carpet, a

National Transportation Safety Board

## FACTUAL REPORT

AVIATION

NTSB ID: CHI01FA206

Occurrence Date: 07/13/2001

Occurrence Type: Accident

## Narrative (Continued)

piece of the control column and yoke, and the oxygen tank. The oxygen tank, the farthest recognizable airplane component, rested approximately 290 feet from the impact scar.

The airplane's engines, propellers, fuel selector panel and valves, and GPS receiver were retained for further examination. An examination of the remaining airplane systems revealed no anomalies.

## MEDICAL AND PATHOLOGICAL INFORMATION

An autopsy of the pilot was conducted by the Greene County, Missouri, Medical Examiner at Springfield, Missouri, on July 14, 2001.

The results of FAA toxicology testing of specimens from the pilot revealed the following volatile concentrations:

>> 14 (mg/dL, mg/hg) ETHANOL detected in blood.  
 No ETHANOL was detected in muscle or kidney.  
 >> 4 (mg/dL, mg/hg) ACETALDEHYDE detected in blood.  
 >> 1 (mg/dL, mg/hg) N-PROPANOL detected in blood.

According to the FAA Toxicology and Accident Research Laboratory, the presence of Ethanol, Acetaldehyde, and N-Propanol are consistent with postmortem putrefaction.

>> DILTIAZEM present in blood and liver.  
 >> 9.637 (ug/mL, ug/g) THEOPHYLLINE detected in blood.  
 >> SALICYLAMIDE detected in powder and pills.  
 >> CAFFEINE detected in powder and pills.

Diltiazem is used to control blood pressure. Theophylline is used to treat respiratory problems as emphysema or asthma. It can also be prescribed for patients suffering angina. Salicylamide and Caffeine in combination are used as an over-the-counter pain reliever.

## TESTS AND RESEARCH

A lineman at the Southland Airport, Sulphur, Louisiana, said that when the airplane departed, it was fully fueled. The lineman said that when the airplane landed at Southland on July 10, the owner told him to top off the fuel tanks. The lineman said he put 41.8 gallons of fuel in the main fuel tanks. The lineman said he visually checked the fuel in the auxiliary tanks. They were full of fuel. The lineman said that the airplane's owner called the airport at 2105 and asked to have the airplane pulled out. He said that the owner's group arrived at the airport at 2215.

The airplane's previous owner said she met with the airplane's current owner to discuss some of the techniques involved in operating it. She recalled that the current owner told her that he was running the fuel tanks to empty before switching and that he was landing the airplane while burning fuel out of the auxiliary fuel tanks. He also asked her, on behalf of the pilot, if the fuel gauges worked. She said she told the current owner that the fuel gauges did work, but that she uses time rather than the gauges to determine when to switch tanks and when to refuel. She also said she told the current owner, "You don't take every drop of fuel out of the tanks before you switch. You have to land on the mains. It's in the POH (Pilot's Operating Handbook)." She said she told him, "You should never land on the auxiliaries." The previous owner described the fuel management technique she used. She said she would takeoff and burn out of the main tanks for 1-1/2 hours or when the needles got to the top of the yellow bands, then she would switch to the auxiliary tanks and burn out of them. She said she would empty the auxiliary tanks, then go back to the main tanks. She said, "It depends on your flight plan - at what altitude you're going to fly at."

National Transportation Safety Board

## FACTUAL REPORT

AVIATION

NTSB ID: CHI01FA206

Occurrence Date: 07/13/2001

Occurrence Type: Accident

## Narrative (Continued)

The airplane's King 90B GPS receiver was examined at the FAA Flight Standards District Office, Kansas City, Missouri. The unit had sustained extensive damage. No information could be retrieved from it.

The airplane's engines were examined at Teledyne Continental Motors, Mobile, Alabama, on October 30, 2001. The examination revealed no pre-impact anomalies with either engine that could have precluded normal operation. An examination of the fuel selector valves showed both valves positioned to their respective main fuel tanks.

The airplane's propellers were examined at Hartzell Propeller, Incorporated, Piqua, Ohio, on November 28, 2001. The examination revealed no pre-impact anomalies with either propeller that could have precluded normal operation. The examination of the left propeller revealed blade angles "consistent with normal operation with power ON while at moderate or high airspeed." The examination of the right propeller revealed, "Two blades were twisted toward low pitch. The blade preload plates had multiple impact marks in a wide range of blade angles, some of which were outside of (both above and below) the normal operating range. The wide variety of marks suggests that they occurred from multiple strikes during the impact sequence and are not useful for estimating a pre-impact blade angle. The harsh twisting, bending, and tearing of one blade tip clearly suggests power ON at the time of impact." The Propeller Accident Report is provided as an addendum to this report.

## ADDITIONAL INFORMATION


Parties to the investigation were the FAA Flight Standards District Office, Kansas City, Missouri, Raytheon Aircraft Company, Teledyne Continental Motors, and Hartzell Propeller, Incorporated.

The airplane's weight and balance computations were provided by the Raytheon Aircraft Company. Weights of the occupants were obtained from their respective driver's licenses. The computations were based on the airplane having full fuel and the female passengers seated in the back of the airplane.

	Weight (lbs)	Arm (inches)	Moment (lbs-inches)	
Airplane Basic Empty Weight	3,660.3		78.3	286,731.7
Fuel Onboard Main	444.0	75.0		33,300.0
Fuel Onboard Auxiliary	372.0	93.0		34,596.0
Pilot & Passenger 1	425.0	87.0		36,975.0
Passengers 2 & 3	350.0	128.0		44,800.0
Passengers 4 & 5	286.0	152.0		43,472.0
Baggage	50.0	180.0		9,000.0
Total at Takeoff	5,582.3		87.58	488,874.7

According to the E-55 Pilot's Operating Handbook (POH), the maximum takeoff weight (MTOW) published is 5,300 pounds. The center of gravity range for the airplane at MtoW is 78.0 inches forward to 86 inches aft. The published weight and balance table in the POH indicates that the center of gravity will tend to move aft as fuel is consumed.


The POH Endurance Profile for the 136-gallon usable fuel load, assuming a full-throttle power setting (2,300 RPM, 24 inches Hg manifold pressure), standard day (ISA), and a pressure altitude of 6,000 feet msl, indicates the airplane would have an endurance of approximately 4 hours. The airplane departed Sulphur, Louisiana, on July 12, 2001, at approximately 2230. The accident occurred on July 13, 2001, at 0057. This would be approximately 2 hours and 27 minutes of airplane operation. According to the Raytheon Aircraft Company, the higher-than-approved takeoff weight, the aft loading, and the level of experience of the pilot could contribute to higher-than-normal


 National Transportation Safety Board <b>FACTUAL REPORT</b> <b>AVIATION</b>	NTSB ID: CHI01FA206	
	Occurrence Date: 07/13/2001	
	Occurrence Type: Accident	

Narrative (Continued)

fuel consumption for all phases of flight.

All of the aircraft wreckage and retained components were released and returned to John R. Ashford and Associates, Incorporated, Denison, Texas.

 <b>National Transportation Safety Board</b> <b>FACTUAL REPORT</b> <b>AVIATION</b>		NTSB ID: CHI01FA206			
		Occurrence Date: 07/13/2001			
		Occurrence Type: Accident			
<b>Landing Facility/Approach Information</b>					
Airport Name	Airport ID:	Airport Elevation	Runway Used	Runway Length	Runway Width
Joplin Regional Airport	JLN	981 Ft. MSL	18	5003	100
Runway Surface Type: Asphalt					
Runway Surface Condition: Dry					
Approach/Arrival Flown: ILS					
VFR Approach/Landing: None					
<b>Aircraft Information</b>					
Aircraft Manufacturer		Model/Series		Serial Number	
Beech		E-55		TE-909	
Airworthiness Certificate(s): Normal					
Landing Gear Type: Retractable - Tricycle					
Amateur Built Acft? No	Number of Seats: 6	Certified Max Gross Wt.	5300 LBS	Number of Engines: 2	
Engine Type:	Engine Manufacturer:	Model/Series:	Rated Power:		
Reciprocating	Continental	IO-520-C(7)	285 HP		
- Aircraft Inspection Information					
Type of Last Inspection	Date of Last Inspection	Time Since Last Inspection	Airframe Total Time		
Annual	10/2000	7 Hours	1597.7 Hours		
- Emergency Locator Transmitter (ELT) Information					
ELT Installed?/Type Yes /	ELT Operated? No	ELT Aided in Locating Accident Site? No			
<b>Owner/Operator Information</b>					
Registered Aircraft Owner		Street Address			
Earl J. Trahan		950 Tallow Road			
		City	State	Zip Code	
		Lake Charles	LA	70607	
Operator of Aircraft		Street Address			
James W. Seaman		1615 Mitchell Street			
		City	State	Zip Code	
		Lake Charles	LA	70607	
Operator Does Business As:			Operator Designator Code:		
- Type of U.S. Certificate(s) Held: None					
Air Carrier Operating Certificate(s):					
Operating Certificate:			Operator Certificate:		
Regulation Flight Conducted Under: Part 91: General Aviation					
Type of Flight Operation Conducted: Personal					

 <p><b>National Transportation Safety Board</b> <b>FACTUAL REPORT</b> <b>AVIATION</b></p>	NTSB ID: CHI01FA206
	Occurrence Date: 07/13/2001
	Occurrence Type: Accident

**First Pilot Information**

Name On File	City On File	State On File	Date of Birth	Age 70
-----------------	-----------------	------------------	---------------	-----------

Sex: M	Seat Occupied: Left	Occupational Pilot? <input type="checkbox"/> Civilian Pilot <input type="checkbox"/>	Certificate Number:
--------	---------------------	--	---------------------

Certificate(s): **Flight Instructor; Commercial**

Airplane Rating(s): **Multi-engine Land; Single-engine Land**

Rotorcraft/Glider/LTA: **None**

Instrument Rating(s): **Airplane**

Instructor Rating(s): **Airplane Multi-engine; Airplane Single-engine; Instrument Airplane**

Current Biennial Flight Review? **04/2000**

Medical Cert.: Class 2	Medical Cert. Status: With Waivers/Limitations	Date of Last Medical Exam: 06/2001
------------------------	--	------------------------------------

- Flight Time Matrix	All A/C	This Make and Model	Airplane Single Engine	Airplane Multi-Engine	Night	Instrument		Rotorcraft	Glider	Lighter Than Air
						Actual	Simulated			
Total Time	6824	3	5384	1440	1477	269	47			
Pilot In Command(PIC)	6654	3								
Instructor	3156									
Instruction Received										
Last 90 Days	35	3	32	3	8	1	1			
Last 30 Days		3		3						
Last 24 Hours	2	2		2						

Seatbelt Used? <b>Yes</b>	Shoulder Harness Used? <b>No</b>	Toxicology Performed? <b>Yes</b>	Second Pilot? <b>No</b>
---------------------------	----------------------------------	----------------------------------	-------------------------

**Flight Plan/Itinerary**

Type of Flight Plan Filed: **IFR**

Departure Point <b>Sulphur</b>	State <b>LA</b>	Airport Identifier <b>L75</b>	Departure Time <b>2230</b>	Time Zone <b>CDT</b>
-----------------------------------	--------------------	----------------------------------	-------------------------------	-------------------------

Destination <b>Joplin</b>	State <b>MO</b>	Airport Identifier <b>JLN</b>	
------------------------------	--------------------	----------------------------------	--


Type of Clearance: **IFR**

Type of Airspace: **Class D; Class E**

**Weather Information**

Source of Wx Information:

Flight Service Station

 <p><b>National Transportation Safety Board</b> <b>FACTUAL REPORT</b> <b>AVIATION</b></p>	NTSB ID: CHI01FA206
	Occurrence Date: 07/13/2001
	Occurrence Type: Accident

**Weather Information**

WOF ID	Observation Time	Time Zone	WOF Elevation	WOF Distance From Accident Site	Direction From Accident Site
JLN	0055	CDT	981 Ft. MSL	3 NM	270 Deg. Mag.

Sky/Lowest Cloud Condition:	Ft. AGL	Condition of Light: Night
-----------------------------	---------	---------------------------

Lowest Ceiling: Overcast	800 Ft. AGL	Visibility: 10	SM	Altimeter: 30.00	"Hg
--------------------------	-------------	----------------	----	------------------	-----

Temperature: 22 °C	Dew Point: 21 °C	Weather Conditions at Accident Site: Instrument Conditions
--------------------	------------------	--

Wind Direction: 60	Wind Speed: 7	Wind Gusts:
--------------------	---------------	-------------


Visibility (RVR):	Ft.	Visibility (RVV)	SM
-------------------	-----	------------------	----

Precip and/or Obscuration:

**Accident Information**

Aircraft Damage: Destroyed	Aircraft Fire: None	Aircraft Explosion: None
----------------------------	---------------------	--------------------------

- Injury Summary Matrix	Fatal	Serious	Minor	None	TOTAL
First Pilot	1				1
Second Pilot					
Student Pilot					
Flight Instructor					
Check Pilot					
Flight Engineer					
Cabin Attendants					
Other Crew					
Passengers	5				5
- TOTAL ABOARD -	6				6
Other Ground					
- GRAND TOTAL -	6				6

 <p>National Transportation Safety Board <b>FACTUAL REPORT</b> AVIATION</p>	NTSB ID: CHI01FA206
	Occurrence Date: 07/13/2001
	Occurrence Type: Accident

Administrative Information

Investigator-In-Charge (IIC)  
DAVID C. BOWLING

Additional Persons Participating in This Accident/Incident Investigation:

Steven B Davis  
Federal Aviation Administration  
Kansas City, MO

Jim Wesley  
Federal Aviation Administration  
Kansas City, MO

Brain D Cassidy  
Raytheon Aircraft Company  
Wichita, KS

Scott Boyle  
Teledyne Continental Motors  
Arvada, CO

Tom McCreary  
Hartzell Propeller, Incorporated  
Piqua, OH