



# National Transportation Safety Board Aviation Accident Final Report

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<b>Location:</b>	CORDELE, GA	<b>Accident Number:</b>	ATL00FA017
<b>Date &amp; Time:</b>	12/21/1999, 2130 EST	<b>Registration:</b>	N1218S
<b>Aircraft:</b>	Cessna 551	<b>Aircraft Damage:</b>	Destroyed
<b>Defining Event:</b>		<b>Injuries:</b>	1 Fatal
<b>Flight Conducted Under:</b>	Part 91: General Aviation - Personal		

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## Analysis

The Cessna 551, collided with trees and subsequently the ground following a missed approach to runway 10, at the Crisp County Airport in Cordele, Georgia. According to the Jacksonville Air Traffic Control Center, the pilot was given radar vectors to the outer marker and cleared him for the non-precision localizer approach to runway 10. Recorded radar data showed the airplane initiating the approach at 1900 feet mean sea level (MSL) as published. The airplane descended to 600 feet MSL as published and over-flew the airport. The controller stated that he was waiting for the missed approach call, as he observed the airplane climb to 700 feet MSL. The airplane then descended back to 600 feet MSL and disappeared from radar. The controller never received a missed approach call. A witness near the airport stated that he heard the airplane fly over but did not see it due to haze and fog.

## Probable Cause and Findings

The National Transportation Safety Board determines the probable cause(s) of this accident to be: The pilot's failure to follow the published missed approach procedures, and to maintain proper altitude. Factors contributing to the severity of the accident were the low ceilings and trees.

## Findings

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Occurrence #1: IN FLIGHT COLLISION WITH TERRAIN/WATER  
Phase of Operation: MISSED APPROACH (IFR)

### Findings

1. (C) IFR PROCEDURE - NOT FOLLOWED - PILOT IN COMMAND
2. (C) ALTITUDE/CLEARANCE - NOT MAINTAINED - PILOT IN COMMAND
3. (F) WEATHER CONDITION - LOW CEILING
4. (F) OBJECT - TREE(S)

## Factual Information

### HISTORY OF FLIGHT

On December 21, 1999, at 2130 eastern standard time, a Cessna 551, N1218S, collided with trees and subsequently the ground following a missed approach to runway 10, at the Crisp County Airport in Cordele, Georgia. The airplane was operated by the private pilot under the provisions of Title 14, CFR Part 91, and instrument flight rules. Instrument meteorological conditions prevailed and an IFR flight plan was filed for the personal flight. The pilot received fatal injuries and the airplane was destroyed. The flight originated in Dallas, Texas, at 1828 central standard time.

According to the Jacksonville Air Traffic Control (ATC) Center, the pilot was given radar vectors to the outer marker and was cleared for the non-precision localizer approach to runway 10. Recorded radar data showed the airplane initiating the approach at 1900 feet mean sea level (MSL) as published. The airplane descended to 600 feet MSL as published and over-flew the airport. The controller stated that he was waiting for the missed approach call, as he observed the airplane climb to 700 feet MSL. The airplane then descended back to 600 feet MSL and disappeared from radar. The controller never received a missed approach call. A witness near the airport stated that he heard the airplane fly over but did not see it. Residents in the area reported to the local authorities that they heard a loud explosion. Search efforts began and the airplane was located at about 0730 on the following day.

### PERSONNEL INFORMATION

The pilot-in-command (PIC) held a private pilot certificate, with ratings for helicopter, single and multi-engine land and for instruments. He also was type rated in the Citation 551. The pilot had owned the accident airplane for eight years and had logged over 958 hours during that time according to his associate.

The pilot's most recent third class medical certificate was issued on April 12, 1999. The pilot had 4,229 hours total time with 130 hours in the last six months with no waivers or limitations. On September 11, 1999, the pilot had satisfactorily completed recurrent training by the ATC Group, Inc., for the Cessna Citation II, in accordance with his insurance requirements.

### AIRPLANE INFORMATION

The airplane was configured with double club seating, a pilot and co-pilot seat, and was certificated for single pilot operation. The airplane was registered to the pilot's company, Valley Projects, Inc., on May 21, 1991. The owner subscribed to Cessna's Cescom services, which is a Cessna computerized maintenance monitoring/reminder program. No overdue inspections were found on Cescom, with the exception of the pitot/static system calibration check. However, the airframe logbook verified the pitot/static system calibration check as having been accomplished on March 5, 1999. According to the log books, the airplane's last 100 hour inspection was accomplished on January 14, 1999, with a total time of 3,650.2 hours. Total time on the airplane at the time of the accident was 3,741 hours.

### METEOROLOGICAL INFORMATION

According to a local resident who lives near the airport, he stated that he "heard a jet over-fly

the facility" and "outside, the fog had settled in and visibility was close to zero."

Cordele (CKF) Automated Weather Observation Service (AWOS) weather at the time of the accident reported: skies 300 feet overcast, visibility one and one quarter mile, temperature 13 degrees Celsius (c), dew point 13 degrees C, and winds calm.

The Albany weather, 35 nautical miles southwest of CKF, at 2147 local time was, wind 020 at four knots, three statute miles visibility in mist, 500 feet overcast, temperature 12 degrees C, dew point 12 degrees C, and altimeter 30.11 inches of mercury.

At the Warner-Robbins Air Force Base, Georgia, 40 nautical miles north of CKF at 2120 local time the weather was reported as; wind 300 degrees at one knot, visibility two and one quarter statute mile, in light rain showers and mist, 800 feet overcast, temperature 11 degrees C, dew point 10 degrees C, and altimeter 30.11 inches of mercury.

#### WRECKAGE AND IMPACT INFORMATION

The impact site was offset from the end of runway 10 on a heading of 140 degrees magnetic, at global positioning system (GPS) coordinates; latitude N 31 degrees 58 minutes and longitude W 083 degrees and 44 minutes. The debris path encompassed an area 550 feet by 80 feet. Three large pine trees, about 50 to 60 feet tall had their tops sheared off approximately 20 feet from the tops. The airplane continued to descend, spreading debris from subsequent impacts with small to medium sized trees. At about 318 feet, the airplane impacted a large oak tree, separating the aft pressure bulkhead, aft fuselage wing carry-thru spar, upper tail-cone skin, horizontal stabilizer and left landing gear. Additionally, the empennage, portions of the right wing, forward cabin and right engine/thrust reverser were separated. The center wing carry-thru section and center fuselage section, the majority of the cockpit, instruments, radios, and the cabin seats were destroyed by fire. The main landing gear actuators were found retracted and the nose gear actuator was extended. Examination of the landing gear system revealed that all three landing gear were in the "up" position.

All flight control surfaces were accounted for. Due to the extent of damage, flight control cable continuity could only be accomplished to the aft tail-cone. Both out-board wings, both stabilizer wings, and both flap panels were completely destroyed, with small to medium sections exhibiting major impact and/or fire damage. The flap cable drive system was destroyed. The flap gear box drive assemblies were found in the scattered debris; however, they were separated from the electric motors and detached from the chain drive assembly. The flap chain drive assembly was not located at the mishap site. During a subsequent wreckage review at Atlanta Air Salvage on January 19, 2000, the flap chain drive assembly was located in the recovered wreckage. Based on the damage chain link measurement observed and a comparison to an undamaged and assembled flap chain drive assembly set to the same dimensions, the flaps were set at five degrees down.

The cockpit seats and cabin seats were found scattered throughout the debris path. Both cockpit seats upholstery and the four-point restraint system webbing were destroyed by fire. The pilots four-point restraint buckle was found in the latched position.

The left engine, a Pratt and Whitney, Model JT15D-4, S/N PCE-70383, turbine engine was found adjacent to the main wing to fuselage carry-thru section and close to the final impact area (end of debris path). The engine components were in several pieces, exhibiting major fire damage. The low compressor fan blades were sheared off 50 to 60 percent and exhibited curling. The thrust reverser actuators and cages had separated from their mounting locations

on the thrust reverser duct or outer barrel. The actuator rods were fully extended, and the thrust reverser doors were in the closed or stowed position.

The right engine, a Pratt and Whitney, Model JT15D-4, S/N PCE-71169, turbine engine with the thrust reverser still attached, were found separated from the engine pylon and lying 30 to 40 feet south or to the right of the final impact area. The engine and thrust reverser were mostly intact, exhibiting minor to moderate damage to the inlet assembly and outer bypass duct. The compressor inlet or the area aft of the low compressor fan was impacted with leaves and wood debris. The fan blades were curled and the exhaust section contained burnt ash debris. The thrust reverser actuators and cages were cracked, but remained attached to the thrust reverser duct. The actuator rods were fully extended, and the thrust reverser doors were in the closed or stowed position.

#### MEDICAL AND PATHOLOGICAL INFORMATION

A post mortem examination of the pilot was conducted by the Georgia Bureau of Investigation Division of Forensic Sciences, in Atlanta, Georgia. On February 17, 2000, a toxicology examination of the pilot was conducted by the FAA Toxicology Research Laboratory. The examination revealed no carbon monoxide, cyanide, or drugs detected in the blood, and no ethanol was detected in the vitreous fluid.

#### TESTS AND RESEARCH

An engine inspection was conducted on January 21, 2000, at the Pratt & Whitney Canada Service Centre, Atlanta, Georgia. The following is a summary of the inspection findings:

The left hand engine was a JT15D-4, S/N 70383, with a total time of 5,423 hours, and 2,551 hours since overhaul. The engine displayed severe fire and impact damage, including complete fire consumption of the intermediate case, accessory gearbox, and the inner and outer bypass ducts. Circumferential rubbing and scoring were displayed by the low compressor fan, the low compressor booster, the high compressor, and the first and second stage low pressure turbines due to radial contact with their adjacent shrouds under impact loads and external housing distortion.

The right hand engine was a JT15D-4, S/N 71169, with a total time of 3,738 hours, and 257 hours since overhaul. The engine displayed light impact damage and no fire damage. Circumferential rubbing and scoring were displayed by the low compressor fan, the low compressor booster, and the first stator low pressure turbine due to contact with their adjacent shrouds under impact loads and external housing distortion. Ingested debris was distributed through the low compressor case, the high pressure compressor, and the combustion section.

During the examinations there were no indications of operational dysfunction to any of the engine components examined, to the extent possible regarding impact damage. Both the left and right hand engines displayed contact signatures to their internal components characteristic of the engines' producing power at impact, likely in a low to middle power range. The engines displayed no indications of any pre-impact anomalies or distress that would have precluded normal operation prior to impact.

#### ADDITIONAL INFORMATION

The wreckage was released to the owner's insurance representative Phil Powell, Carson and

Brooks, Post Office Box 888525, 2300 Peachford Rd. Suite 1200, Atlanta, Georgia 30356.

## Pilot Information

<b>Certificate:</b>	Private	<b>Age:</b>	63
<b>Airplane Rating(s):</b>	Multi-engine Land; Single-engine Land	<b>Seat Occupied:</b>	Left
<b>Other Aircraft Rating(s):</b>	Helicopter	<b>Restraint Used:</b>	Seatbelt, Shoulder harness
<b>Instrument Rating(s):</b>	Airplane	<b>Second Pilot Present:</b>	No
<b>Instructor Rating(s):</b>	None	<b>Toxicology Performed:</b>	
<b>Medical Certification:</b>	Class 3 Valid Medical--w/ waivers/lim.	<b>Last Medical Exam:</b>	04/12/1999
<b>Occupational Pilot:</b>		<b>Last Flight Review or Equivalent:</b>	
<b>Flight Time:</b>	4229 hours (Total, all aircraft), 1108 hours (Total, this make and model)		

## Aircraft and Owner/Operator Information

<b>Aircraft Manufacturer:</b>	Cessna	<b>Registration:</b>	N1218S
<b>Model/Series:</b>	551 551	<b>Aircraft Category:</b>	Airplane
<b>Year of Manufacture:</b>		<b>Amateur Built:</b>	No
<b>Airworthiness Certificate:</b>	Normal	<b>Serial Number:</b>	551-0428
<b>Landing Gear Type:</b>	Retractable - Tricycle	<b>Seats:</b>	10
<b>Date/Type of Last Inspection:</b>	01/14/1999, Continuous Airworthiness	<b>Certified Max Gross Wt.:</b>	17150 lbs
<b>Time Since Last Inspection:</b>	91 Hours	<b>Engines:</b>	2 Turbo Jet
<b>Airframe Total Time:</b>	3741 Hours	<b>Engine Manufacturer:</b>	P&W
<b>ELT:</b>	Not installed	<b>Engine Model/Series:</b>	JT15
<b>Registered Owner:</b>	VALLEY PROJECTS INC.	<b>Rated Power:</b>	2200 lbs
<b>Operator:</b>	WILLIAM MCMAHAN	<b>Air Carrier Operating Certificate:</b>	None

## Meteorological Information and Flight Plan

Conditions at Accident Site:	Instrument Conditions	Condition of Light:	Night/Dark
Observation Facility, Elevation:	ABY, 197 ft msl	Observation Time:	2047 CST
Distance from Accident Site:	35 Nautical Miles	Direction from Accident Site:	220°
Lowest Cloud Condition:	Unknown	Temperature/Dew Point:	12° C / 12° C
Lowest Ceiling:	Overcast / 500 ft agl	Visibility	3 Miles
Wind Speed/Gusts, Direction:	4 knots, 20°	Visibility (RVR):	0 ft
Altimeter Setting:	30.1 inches Hg	Visibility (RVV):	0 Miles
Precipitation and Obscuration:			
Departure Point:	DALLAS, TX (DAL)	Type of Flight Plan Filed:	IFR
Destination:	CORDELE, GA (CKF)	Type of Clearance:	IFR
Departure Time:	1828 CST	Type of Airspace:	Class E

## Airport Information

Airport:	CRISP COUNTY AIRPORT (CKF)	Runway Surface Type:	Asphalt
Airport Elevation:	305 ft	Runway Surface Condition:	Wet
Runway Used:	10	IFR Approach:	Localizer Only
Runway Length/Width:	5000 ft / 150 ft	VFR Approach/Landing:	None

## Wreckage and Impact Information

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

## Administrative Information

Investigator In Charge (IIC):	BUTCH WILSON	Adopted Date:	06/04/2002
Additional Participating Persons:	CONRAD MORA; COLLEGE, GA		
Publish Date:			
Investigation Docket:	NTSB accident and incident docket serve as permanent archival information for the NTSB's investigations. Dockets released prior to June 1, 2009 are publicly available from the NTSB's Record Management Division at <a href="mailto:pubinq@ntsb.gov">pubinq@ntsb.gov</a> , or at 800-877-6799. Dockets released after this date are available at <a href="http://dms.nts.gov/pubdms/">http://dms.nts.gov/pubdms/</a> .		

The National Transportation Safety Board (NTSB), established in 1967, is an independent federal agency mandated by Congress through the Independent Safety Board Act of 1974 to investigate transportation accidents, determine the probable causes of the accidents, issue safety recommendations, study transportation safety issues, and evaluate the safety effectiveness of government agencies involved in transportation. The NTSB makes public its actions and decisions through accident reports, safety studies, special investigation reports, safety recommendations, and statistical reviews.

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