National Transportation Safety Board
Aviation Accident Final Report

Location:	Cortez, CO	**Accident Number:**	DEN04FA035
Date & Time:	01/03/2004, 1212 MST	**Registration:**	N700SR
Aircraft:	Rockwell 690A	**Aircraft Damage:**	Destroyed
Defining Event:		**Injuries:**	1 Fatal
Flight Conducted Under:	Part 91: General Aviation - Positioning		

Analysis

The pilot executed the VOR approach to runway 21. He was heard to report passing the VORTAC outbound for the procedure turn, and crossing the VORTAC (final approach fix) inbound. Witnesses said they saw the airplane emerge from the overcast slightly high and fast. They said the airplane entered a steep left bank and turned about 90 degrees before disappearing in a snow shower northeast of the airport. They heard no unusual engine noises. Another witness near the accident site saw the airplane in a steep bank and at low altitude, "just above the power lines." Based on the witness location, the airplane had turned about 270 degrees. The witness said the wings "wobbled" and the nose "dipped," then the left wing dropped and the airplane descended to the ground "almost vertically." Members of the County Sheriff's Posse, who were at a gunnery range just north of the airport, reported hearing an airplane pass over at low altitude. One posse member said he heard "an engine pitch change." He did not see the airplane because it was "snowing heavily," nor did he hear the impact. An examination of the airplane revealed no anomalies. At the time of the accident, the weather at the destination airport was few clouds 300 feet, 900 feet broken, 3,200 feet overcast; visibility, 1/2 statute and snow; temperature, 32 degrees F.; dew point, 32 degrees F.; wind, 290 degrees at 10 knots, gusting to 15 knots; altimeter, 29.71 inches.

Probable Cause and Findings

The National Transportation Safety Board determines the probable cause(s) of this accident to be: the pilot's inadequate planned approach and his failure to maintain airspeed which resulted in a stall. Contributing factors were low altitude flight maneuvering in an attempt to lose excessive altitude and realign the airplane for landing, and his failure to perform a missed approach, and the snow fall.

Findings

Occurrence #1: LOSS OF CONTROL - IN FLIGHT
Phase of Operation: MANEUVERING

Findings
1. (C) AIRCRAFT CONTROL - NOT MAINTAINED - PILOT IN COMMAND
2. (F) PLANNED APPROACH - IMPROPER - PILOT IN COMMAND
3. (F) LOW ALTITUDE FLIGHT/MANEUVER - EXCESSIVE - PILOT IN COMMAND
4. (F) MISSED APPROACH - NOT PERFORMED - PILOT IN COMMAND
5. (F) FLIGHT INTO KNOWN ADVERSE WEATHER - INTENTIONAL - PILOT IN COMMAND
6. (F) WEATHER CONDITION - SNOW
7. (F) STALL - INADVERTENT - PILOT IN COMMAND

Occurrence #2: IN FLIGHT COLLISION WITH TERRAIN/WATER
Phase of Operation: DESCENT - UNCONTROLLED

Findings
8. TERRAIN CONDITION - OPEN FIELD

Factual Information

HISTORY OF FLIGHT

On January 3, 2004, at 1212 mountain standard time, a Rockwell 690A, N700SR, registered to LT Aire, Inc., and operated by Air West, Inc., both of Mesa, Arizona, was destroyed when it impacted terrain while circling to land at the Cortez Municipal Airport (CEZ), Cortez, Colorado. The commercial pilot, the only occupant aboard, was fatally injured. Instrument meteorological conditions prevailed, and an instrument flight rules (IFR) flight plan had been filed for the positioning flight being conducted under Title 14 CFR Part 91. The flight originated in Mesa, Arizona, approximately 1030.

According to the operator, the purpose of the flight was to fly one of airplane owners from Telluride, Colorado, to Mesa. According to Federal Aviation Administration (FAA) documents, the pilot telephoned the Prescott, Arizona, Automated Flight Service Station at 0835 to file an IFR flight plan to Telluride. The AFSS specialist advised the pilot that he would need a reservation number in order to fly to Telluride. A visual flight rules (VFR) flight plan was filed instead so that the pilot could call back later with the reservation number and the flight plan would be changed to IFR. The pilot was then given an abbreviated weather briefing because he indicated he had already received the weather advisories. The briefing terminated at 0845. The operator said the pilot also received a weather briefing via computer. When he learned that the Telluride airport was closed due to weather, he contacted his passenger and arranged to meet him in Cortez. He then telephoned the Prescott AFSS at 0943 and amended his previously-filed flight plan, changing the destination to Cortez. He also filed a return flight plan from Cortez to Mesa. The conversation terminated at 0945.

At 1049, the pilot contacted Falcon Field Ground Control and was cleared to taxi to runway 22L. At 1052, he was issued his IFR clearance and at 1058, he was cleared for takeoff. The en route portion of the flight was uneventful. At 1131, after contacting Denver ARTCC, the pilot was instructed to cross the initial approach fix at or above 12,000 feet and was cleared for the VOR approach to Cortez. Recorded NTAP (National Track Analysis Program) radar data captured the initial portion of the instrument approach (see Aircraft Situation Display.avi, EXHIBITS). The pilot reported passing the CEZ VORTAC (Very high frequency Omnidirectional Radio range-TACtical air navigation) outbound for the procedure turn, and crossing the CEZ VORTAC (final approach fix) inbound. Radar contact was then lost. Two witnesses, a King Air pilot and an airport employee, walked outside their hanger to watch for the approaching airplane. They said they saw the airplane emerge from the overcast, slightly high and fast, and entered a steep left bank. It turned about 90 degrees before disappearing in a snow shower northeast of the airport. They heard no unusual engine noises. Another witness, sitting in a restaurant across the highway near the airport perimeter, saw the airplane in a steep bank and at low altitude, "just above the power lines." Based on the witness' statement and location, the airplane had turned about 270 degrees. The witness said the wings "wobbled" and the nose "dipped," then the left wing dropped and the airplane descend to the ground "almost vertically." Members of the Montezuma County Sheriff's Posse, who were at a gunnery range just north of the airport, reported hearing an airplane pass over at low altitude. One posse member said he heard "an engine pitch change." He did not see the airplane because it was "snowing heavily," nor did he hear the impact.

The accident occurred during the hours of daylight in instrument meteorological conditions.

The location --- 7033 Highway 160 --- was defined as 37.31526 degrees north latitude, and 108.61073 degrees west longitude, and at an elevation of 5,948 feet msl (mean sea level).

CREW INFORMATION

The pilot, age 39, held a commercial pilot certificate, dated 22 August 2001, with airplane multiengine land and instrument ratings, and private pilot privileges in airplane single-engine land. He also held a mechanic's certificate, dated 18 March 1999, with airframe and powerplant ratings. His second class airman medical certificate, dated 22 April 2003, contained no restrictions or limitations. He was employed by Air West on March 22, 2002. He was not one of the company's regular FAR 135 line pilots. His primary position was the director of maintenance. He had previously worked as a line mechanic for Yugoslav Airlines.

His logbook indicated that he had logged pilot-in-command time in the Cessna 310/414/421, Beech 18, and Rockwell 690A aircraft. He had also flown the Rockwell 690A in Montana the previous year during the forest fire season under contract to the U.S. Forest Service. His initial ground/flight training in the Rockwell 690A was completed on 6 December 2002, at Aviation Training Management (ATM), Vero Beach, Florida. He had also satisfactorily completed ATM's annual flight review and instrument proficiency check. His most recent FAR 135 proficiency check was accomplished on April 22, 2003. A more recent 6 month proficiency check was not documented. According to the Aircraft Accident Report, the company reported his most recent flight review was accomplished on November 15, 2003. His logbook, however, contained no such documentation.

The pilot's two logbooks, containing entries from May 26, 1995, to April 1, 2002, and from April 2, 2002, to December 18, 2003, respectively, were made available for examination. According to these logbooks, the pilot had accumulated the following flight time (in hours):

Total time: 1,872.4

Pilot-in-command: 1,808.8

Second-in-command: 3.3

Airplane, single-engine: 532.5

Airplane, multiengine: 1,341.9

Twin Commander 690A: 91.1

Instruction received: 134.8

Night: 286.0

Cross-country: 1,243.5

Actual IFR: 69.5

Simulated IFR: 111.9

AIRCRAFT INFORMATION

N700SR, a model 690A (s/n 11164), was manufactured by Rockwell in 1974 (the type certificate is presently owned by the Twin Commander Aircraft Corporation). It was equipped with two Garrett AiResearch TPE331-5-251K turboprop engines (s/n P-06318, left; P06343, right), rated at 717.5 shaft horsepower, driving two Hartzell 3-blade, all-metal, full feathering and fully reversible propellers (m/n HC-B3TN-5FL).

According to the airplane's flight log, as of January 2, 2004, the airframe had accrued 7,505.8 hours. The left engine had accrued 3,697.6 hours and 3,777 cycles, and the right engine had accrued 3,635.6 hours and 3,914 cycles.

According to maintenance records, the following airframe and engine inspections were made:

Phase B, 10/28/03, 2,992.2 hours Hobbs, 7,450.0 hours total

Phase A, 09/25/03, 2,946.1 hours Hobbs, 7,403.9 hours total

Phase D, 08/12/03, 2,896.0 hours Hobbs, 7,353.8 hours total

Phase C, 07/01/03, 2,849.6 hours Hobbs, 7,307.4 hours total

The most recent pitot-static/transponder check was accomplished on 29 April 2003, at a tachometer reading of 2,709.3 hours.

METEOROLOGICAL INFORMATION

The following special ASOS (Automated Surface Observation Station) meteorological report was recorded at CEZ at 1209: Wind, 290 degrees at 10 knots, gusting to 15 knots; visibility, 0.5 statute mile, snow, fog; sky condition, few clouds 300 feet, ceiling 900 feet broken, 3,200 feet overcast; temperature, 0 degrees C.; dew point, 0 degrees C.; altimeter, 29.71 inches of mercury; remarks: unknown precipitation began 1157, ended 1859, snow began 1859, freezing rain information not available.

Satellite photographs and radar images depicted an area of light to medium intensity precipitation in the southwest corner of Colorado, including Cortez.

AIDS TO NAVIGATION

There were no reported difficulties with the Cortez VORTAC.

COMMUNICATIONS

According to FAA documents, transmissions from N700SR to various air route traffic control centers (ARTCCs) were "weak and scratchy." There were no reported communications difficulties.

AERODROME INFORMATION

Cortez Municipal Airport, located 3 miles southwest of town, is at an elevation of 5,918 feet msl. It is an uncontrolled airport (no control tower), and is served by one commuter air carrier. It has one runway: 03-21/7,205 ft. x 100 ft., asphalt with porous friction course overlay, equipped with medium intensity runway lights (MIRL) and runway end identifier lights (REILS). To the left of runway 21's threshold is a 4-box VASI (visual approach slope indicator), set to a 3-degree glide slope.

WRECKAGE AND IMPACT INFORMATION

The on-scene investigation commenced January 05 and terminated on January 06.

The debris field was confined to a 100-foot radius from the impact point. There was no evidence of a lateral energy path. The cockpit was crushed. The fuselage, which was aligned on a magnetic heading of 220 degrees, was compromised just forward of the dorsal fin, which was aligned on a magnetic heading of 253 degrees. The severed tail section rested on its cone about 25 feet behind the fuselage. The horizontal stabilizer, elevators and rudder were undamaged,

but the leading edge of the vertical stabilizer bore numerous dents. Damage to the top aft portion of the fuselage was consistent with being struck by the vertical stabilizer. Measurements made of the crater slopes, created by both engines and the aircraft's nose, measured 30 degrees nose down. Leading edge accordian-type compression damage was noted along the entire length of both wings.. The inboard flaps were up; the outboard flaps were down. The flap actuator, however, was extended 2.5 inches which, according to the Twin Commander Aircraft representative, was equivalent to 27.32 degrees flaps down, or approximately three-quarters flaps (full flaps is 40 degrees down, or 3.66 inches actuator extension). The representative added that the flaps are hydraulically actuated and if pressure is removed, the actuator could be displaced. This would be particularly true during wreckage retrieval. The right flap track was separated from the airframe and was found underneath the engine nacelle. The left aileron remained attached to the wing via the inboard hinge. The landing gear was determined to be down and locked at the time of impact. The left main landing gear was crushed underneath the wing. The right main landing gear separated from the nacelle and was located 7 feet behind the empennage. Primary flight control continuity was established up to the forward fuselage area.

Both engines were buried in the dirt at a 30 degree angle. The left engine was displaced 15 degrees to the left. It remained attached to the left hand mounts but was separated from the right hand mounts. The propeller assembly remained attached to the engine. One blade was exposed and displayed S-bending. The top portion of the second blade was visible, curled, but the tip was missing. The third blade separated and was found 76 feet in front of the wreckage. The spinner was deformed and fractured. The right engine remained attached to its mounts. The propeller was separated from the shaft flange. The spinner was not visible. Eighteen inches of one blade was exposed. Only two blades remained attached to the hub. The third blade was located near the right wing tip. After removal from the craters, both engines exhibited metal splatter on the third stage turbine.

MEDICAL AND PATHOLOGICAL INFORMATION

An autopsy (MA 04-01) was performed on the pilot on January 6, 2004, at the request of the Montezuma County Coroner. There was no evidence of incapacitation, impairment, or pre-existing disease.

A toxicological screen was performed by FAA's Civil Aeromedical Institute (CAMI) in Oklahoma City, Oklahoma. According to CAMI's report (200400007001), no ethanol was detected in brain or muscle tissue, and no drugs were detected in liver tissue/fluid. Carbon monoxide and cyanide screens were not performed.

ADDITIONAL INFORMATION

Minutes after the accident, an airplane departed Cortez on an IFR flight to Phoenix, Arizona. The airplane and pilot was subsequently identified and the pilot was asked to submit a statement as to the weather conditions he encountered. The pilot complied and wrote, "While waiting for [an IFR] clearance it began to snow heavily with large wet flakes, and the visibility dropped to about one mile as I could barely see the end of the runway at 7,200 feet away. Snow/slush was accumulating on my wings and I was about to taxi back in when I received the clearance to depart. The plane was light, about 10,000 pounds, and did not have a problem on takeoff or climb out. I broke out of the clouds about 3 miles west of the CEZ VOR and the ice quickly sublimated from the wings. I learned of the accident when I returned to CEZ about 3

hours later and by then the field was VFR..."

The wreckage was released to the insurance adjuster on January 9, 2004.

In addition to the Federal Aviation Administration, designated parties to the investigation included the Twin Commander Corporation (airframe) and the Honeywell Corporation (powerplant).

Pilot Information

Certificate:	Commercial; Private	**Age:**	39, Male
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:**	No
Instructor Rating(s):	None	**Toxicology Performed:**	Yes
Medical Certification:	Class 2 Valid Medical--no waivers/lim.	**Last FAA Medical Exam:**	04/22/2003
Occupational Pilot:		**Last Flight Review or Equivalent:**	11/15/2003
Flight Time:	1872 hours (Total, all aircraft), 91 hours (Total, this make and model), 1809 hours (Pilot In Command, all aircraft), 30 hours (Last 90 days, all aircraft), 12 hours (Last 30 days, all aircraft)		

Aircraft and Owner/Operator Information

Aircraft Make:	Rockwell	**Registration:**	N700SR
Model/Series:	690A	**Aircraft Category:**	Airplane
Year of Manufacture:		**Amateur Built:**	No
Airworthiness Certificate:	Normal	**Serial Number:**	11164
Landing Gear Type:	Retractable - Tricycle	**Seats:**	10
Date/Type of Last Inspection:	10/28/2003, Continuous Airworthiness	**Certified Max Gross Wt.:**	10500 lbs
Time Since Last Inspection:	56 Hours	**Engines:**	2 Turbo Prop
Airframe Total Time:	7506 Hours as of last inspection	**Engine Manufacturer:**	Garrett
ELT:	Installed, not activated	**Engine Model/Series:**	TPE331-5-251K
Registered Owner:	LT Aire, LLC	**Rated Power:**	718 hp
Operator:	LT Aire, LLC	**Operating Certificate(s) Held:**	On-demand Air Taxi (135)
Operator Does Business As:	Air West, Inc.	**Operator Designator Code:**	W9WA

Meteorological Information and Flight Plan

Conditions at Accident Site:	Instrument Conditions	**Condition of Light:**	Day
Observation Facility, Elevation:	CEZ, 5914 ft msl	**Distance from Accident Site:**	
Observation Time:	1209 MST	**Direction from Accident Site:**	
Lowest Cloud Condition:	Few / 300 ft agl	**Visibility**	0.5 Miles
Lowest Ceiling:	Broken / 900 ft agl	**Visibility (RVR):**	
Wind Speed/Gusts:	10 knots / 15 knots	**Turbulence Type Forecast/Actual:**	/
Wind Direction:	290°	**Turbulence Severity Forecast/Actual:**	/
Altimeter Setting:	29.71 inches Hg	**Temperature/Dew Point:**	0°C / 0°C
Precipitation and Obscuration:			
Departure Point:	Mesa, AZ (FFZ)	**Type of Flight Plan Filed:**	IFR
Destination:	Cortez, CO (CEZ)	**Type of Clearance:**	IFR
Departure Time:	1030 MST	**Type of Airspace:**	Class E

Airport Information

Airport:	Cortez Municipal (CEZ)	**Runway Surface Type:**	Asphalt
Airport Elevation:	5914 ft	**Runway Surface Condition:**	Snow--wet
Runway Used:	21	**IFR Approach:**	Circling; VOR
Runway Length/Width:	7205 ft / 100 ft	**VFR Approach/Landing:**	Unknown

Wreckage and Impact Information

Crew Injuries:	1 Fatal	**Aircraft Damage:**	Destroyed
Passenger Injuries:	N/A	**Aircraft Fire:**	None
Ground Injuries:	N/A	**Aircraft Explosion:**	None
Total Injuries:	1 Fatal	**Latitude, Longitude:**	37.302778, -108.628056

Administrative Information

Investigator In Charge (IIC):	Arnold W Scott	**Report Date:**	06/30/2004
Additional Participating Persons:	Dale L Ogden; FAA Flight Standards District Office; Salt Lake City, UT Geoffrey A Pence; Twin Commander Corporation; Arlington, WA Harry A Reichel; Honeywell; Phoenix, AZ		
Publish Date:			
Investigation Docket:	NTSB accident and incident dockets 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 pubinq@ntsb.gov, or at 800-877-6799. Dockets released after this date are available at http://dms.ntsb.gov/pubdms/.		