



# Aviation Investigation Final Report

<b>Location:</b>	EXCELSIOR SPRGS, Missouri	<b>Accident Number:</b>	CHI94DCG02
<b>Date &amp; Time:</b>	July 5, 1994, 16:50 Local	<b>Registration:</b>	N7965V
<b>Aircraft:</b>	AERO COMMANDER CALAIR A-9B	<b>Aircraft Damage:</b>	Destroyed
<b>Defining Event:</b>		<b>Injuries:</b>	1 Fatal
<b>Flight Conducted Under:</b>	Part 137: Agricultural		

## Analysis

THE PILOT WAS MAKING A TEST APPLICATION RUN WITH A LOAD OF WATER OVER A PRIVATE FARM AIRSTRIP AFTER CLEANING HIS SPRAY EQUIPMENT. THE AIRPLANE STRUCK UNMARKED POWERLINES WHICH WERE 950 FEET FROM AND 48 FEET ABOVE THE THRESHOLD (2.89 DEGREES). NO ANOMALIES WERE DISCOVERED WITH THE AIRPLANE, THE ENGINE EXHIBITED INDICATIONS OF HIGH POWER AT IMPACT, AND WITNESSES DESCRIBED HEARING THE ENGINE UNTIL IMPACT.

## Probable Cause and Findings

The National Transportation Safety Board determines the probable cause(s) of this accident to be: The pilot's failure to maintain altitude clearance above the powerlines during his maintenance test application run.

### Findings

Occurrence #1: IN FLIGHT COLLISION WITH OBJECT  
Phase of Operation: MANEUVERING - AERIAL APPLICATION

#### Findings

1. (C) ALTITUDE/CLEARANCE - NOT MAINTAINED - PILOT IN COMMAND
2. (F) OBJECT - WIRE, TRANSMISSION

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

Findings

3. TERRAIN CONDITION - OPEN FIELD

## Factual Information

### HISTORY OF FLIGHT

On July 5, 1994, at 1650 central daylight time (CDT), an Aero Commander, Calair A-9B, N7965V, owned and operated by Air Cover, Inc., of Chilhowee, Missouri, was destroyed when it impacted terrain after striking powerlines during a practice swath run at McCanles Farm Airstrip, five miles east-southeast of Excelsior Springs, Missouri.

The Airline Transport certificated pilot was fatally injured. The airplane was destroyed upon impact; there was no fire. Visual meteorological conditions prevailed at the time of the accident and no flight plan was filed. The airplane, which was approved for use under 14 CFR Part 137, was being flown at the time of the accident to test its spray nozzles.

Independence Memorial Airport (31P), Independence, Missouri, was the operations base for Air Cover, Inc., the agricultural aircraft operating business owned by the pilot. Earlier in the day, the pilot departed 31P for McCanles Farm Airstrip. Upon his arrival, the pilot and the farm owner flushed and cleaned the spray tank, screens and nozzles and loaded twenty to thirty gallons of water into the aircraft spray tank.

The farm owner, who was the primary witness, stated that the pilot made a normal takeoff from his farm airstrip to the southeast. About three minutes after takeoff, he heard engine RPM increase for a few seconds, and then a sudden stoppage of the engine and impact. Due to numerous trees between his vantage point and the accident site, he did not observe the aircraft hit the powerline or impact the terrain.

Another witness, who lives within one mile of the crash site, stated that he heard an aircraft fly over his property and then observed the powerline near his residence shake and sway.

### PERSONNEL INFORMATION

The pilot held Airline Transport Pilot certificate Number 1502470, with privileges for airplane multi-engine land. He held type ratings in the DC-9 and B-727. He held commercial and flight instructor ratings for airplane single-engine land. His flight instructor certificate was last issued on August 16, 1992, and his flight engineer certificate for turbojet-powered aircraft was issued May 31, 1966. He was a retired major airline pilot.

His second class medical certificate was issued May 27, 1994, with a restriction that he must wear corrective lenses. His medical certificate was valid for aerial application operations for compensation under 14 CFR Part 137.

The pilot had accumulated a total of 16,400 civil flight hours according to records on file in the Civil Aviation Registry, AVN- 400, and the Aeromedical Certification Division, AAM-300, at the Mike Monroney Aeronautical Center in Oklahoma City, Oklahoma. No personal pilot records or logbooks were available except for a pilot logbook excerpt from August 16, 1992, which shows flight time in a Champ 8-KCAB and which illustrates that Mr. Coleman had satisfactorily completed a biennial flight review equivalent.

#### AIRCRAFT INFORMATION

The airplane was an Aero Commander Calair A-9B, serial number 1574, certificated in the restricted category. The FAA Aircraft registry indicates that the airplane was registered to Air Cover, Inc., on August 13, 1993.

Maintenance records have not been available since the date of the accident. Air Safety Inspectors from the FAA Flight Standards District Office in Kansas City, Missouri, conducted an inspection of the airplane and maintenance records on January 7, 1994, for the purpose of approving N7965V for operations under 14 CFR Part 137.

The total time on the airplane on September 2, 1993, when the pilot applied for an amendment to use N7965V in 14 CFR Part 137 operations was 3,353 hours, and the tachometer reading was 1,856 hours. The tachometer reading on July 5, 1994, was 1,862.5 hours, and airframe total time 3,360.0 hours.

Fueling records at 31P establish that 8.8 gallons of 100LL fuel was purchased by N7965V on July 5, 1994.

#### AERODROME INFORMATION

McCanles Farm Airstrip is a private airstrip and is not depicted on VFR aeronautical charts. According to its owner, the runway is oriented on a heading of approximately 150 degrees by 330 degrees, and is 2,000 feet long. The runway was dry on the day of the accident.

The runway is located on generally level terrain, but slopes slightly downhill to the southeast. South and southeast of the runway, the terrain slopes downhill more abruptly. Powerlines, 68 feet high, are located 950 feet southeast of the approach end of runway 33, and angle from east-northeast to west-southwest. These powerlines do not contain any type of markings. The power pole bases are 20 feet below the runway threshold. The angle from the threshold to the power lines 2.89 degrees.

#### WRECKAGE AND IMPACT INFORMATION

The airplane impacted an open grassy field 500 to 600 feet southeast of the approach end of the northwest runway, and approximately 200 feet left of the extended centerline. The terrain is a farm field which slopes uphill from southeast to northwest, toward the approach end of

the runway. The field is partially covered in tall grass, and partially harvested vegetation.

The wreckage sequence swath was approximately 200 feet long. The outboard section of the left wing struck a single powerline and exhibited leading edge and structural damage. The left wing and landing gear separated from the main part of the airplane. The left wing and landing gear separated when the airplane contacted the terrain.

A prop strike in the ground indicates that the engine was developing power when it impacted the terrain. The propeller exhibits leading edge polishing and forward bending along the inboard half of its radius. The tips are curled aft almost 180 degrees. The position of the left wing impact point and prop strike shows that contact by both was nearly simultaneous.

Additional ground scars indicate that after the initial ground contact by the left wing and propeller, the airplane became airborne and impacted terrain a second time. Damage to the upper fuselage and canopy indicate inverted ground contact before the airplane came to rest upright.

The flaps were in the fully extended position (24 degrees). The fuel tanks and sumps were ruptured and void of fuel. Upon arrival at the accident site, a strong fuel smell was evident.

#### MEDICAL AND PATHOLOGICAL

An autopsy was performed by Bonita J. Peterson, M.D., of Kansas City, Missouri, on July 6, 1994. The autopsy report detailed multiple trauma injuries. Toxicological samples were forwarded to the FAA Toxicology and Accident Research Laboratory. The results were negative for all substances tested.

The pilot had a restriction on his medical certificate that he "must wear corrective lenses." There was no evidence of lenses being worn nor were any eyeglasses found at the accident site, or in the personal effects that accompanied him to the coroners office.

#### SURVIVAL ASPECTS

The pilot was ejected from the airplane and was found approximately 35 feet from the main part of the wreckage. The lap belt restraint webbing was found frayed and severed on the right side. The base attachment points for both the left and right side of the lap belt loops remained attached at their anchor points. The buckle was found buckled in the closed position. The shoulder harness straps were found behind the seat with the lugs not locked in the worn position.

#### ADDITIONAL INFORMATION

The aircraft wreckage was released to the owners representative on July 11, 1994.

## Pilot Information

<b>Certificate:</b>	Airline transport; Flight engineer; Flight instructor	<b>Age:</b>	54, Male
<b>Airplane Rating(s):</b>	Single-engine land; Multi-engine land	<b>Seat Occupied:</b>	Center
<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>	Airplane single-engine	<b>Toxicology Performed:</b>	Yes
<b>Medical Certification:</b>	Class 2 Valid Medical-w/ waivers/lim	<b>Last FAA Medical Exam:</b>	May 27, 1994
<b>Occupational Pilot:</b>	Yes	<b>Last Flight Review or Equivalent:</b>	
<b>Flight Time:</b>	16400 hours (Total, all aircraft)		

## Aircraft and Owner/Operator Information

<b>Aircraft Make:</b>	AERO COMMANDER	<b>Registration:</b>	N7965V
<b>Model/Series:</b>	CALAIR A-9B CALAIR A-9	<b>Aircraft Category:</b>	Airplane
<b>Year of Manufacture:</b>		<b>Amateur Built:</b>	
<b>Airworthiness Certificate:</b>	Restricted (Special)	<b>Serial Number:</b>	1574
<b>Landing Gear Type:</b>	Tailwheel	<b>Seats:</b>	1
<b>Date/Type of Last Inspection:</b>	September 2, 1993 Annual	<b>Certified Max Gross Wt.:</b>	3000 lbs
<b>Time Since Last Inspection:</b>	7 Hrs	<b>Engines:</b>	1 Reciprocating
<b>Airframe Total Time:</b>	3360 Hrs	<b>Engine Manufacturer:</b>	LYCOMING
<b>ELT:</b>	Not installed	<b>Engine Model/Series:</b>	IO-540-G1C5
<b>Registered Owner:</b>	AIR COVER, INC	<b>Rated Power:</b>	290 Horsepower
<b>Operator:</b>	AIR COVER, INC	<b>Operating Certificate(s) Held:</b>	
<b>Operator Does Business As:</b>		<b>Operator Designator Code:</b>	WDDG

## Meteorological Information and Flight Plan

<b>Conditions at Accident Site:</b>	Visual (VMC)	<b>Condition of Light:</b>	Day
<b>Observation Facility, Elevation:</b>	MKC ,759 ft msl	<b>Distance from Accident Site:</b>	25 Nautical Miles
<b>Observation Time:</b>	16:45 Local	<b>Direction from Accident Site:</b>	236°
<b>Lowest Cloud Condition:</b>	Scattered / 5500 ft AGL	<b>Visibility</b>	7 miles
<b>Lowest Ceiling:</b>	None	<b>Visibility (RVR):</b>	
<b>Wind Speed/Gusts:</b>	5 knots /	<b>Turbulence Type Forecast/Actual:</b>	/
<b>Wind Direction:</b>	170°	<b>Turbulence Severity Forecast/Actual:</b>	/
<b>Altimeter Setting:</b>	29 inches Hg	<b>Temperature/Dew Point:</b>	33°C / 21°C
<b>Precipitation and Obscuration:</b>	No Obscuration; No Precipitation		
<b>Departure Point:</b>	INDEPENDENCE , MO (31P )	<b>Type of Flight Plan Filed:</b>	None
<b>Destination:</b>		<b>Type of Clearance:</b>	None
<b>Departure Time:</b>	00:00 Local	<b>Type of Airspace:</b>	Class D;Class G

## Airport Information

<b>Airport:</b>	MCCANLES FARM AIRSTRIP	<b>Runway Surface Type:</b>	Grass/turf
<b>Airport Elevation:</b>		<b>Runway Surface Condition:</b>	Dry;Vegetation
<b>Runway Used:</b>	33	<b>IFR Approach:</b>	None
<b>Runway Length/Width:</b>	2000 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>		<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>	39.350009,-94.229484(est)

## Administrative Information

<b>Investigator In Charge (IIC):</b>	Buettner, Roman
<b>Additional Participating Persons:</b>	RICHARD J CODDINGTON; KANSAS CITY , MO
<b>Original Publish Date:</b>	May 9, 1995
<b>Last Revision Date:</b>	
<b>Investigation Class:</b>	<a href="#">Class</a>
<b>Note:</b>	
<b>Investigation Docket:</b>	<a href="https://data.nts.gov/Docket?ProjectID=9337">https://data.nts.gov/Docket?ProjectID=9337</a>

The National Transportation Safety Board (NTSB) is an independent federal agency charged by Congress with investigating every civil aviation accident in the United States and significant events in other modes of transportation—railroad, transit, highway, marine, pipeline, and commercial space. We determine the probable causes of the accidents and events we investigate, and issue safety recommendations aimed at preventing future occurrences. In addition, we conduct transportation safety research studies and offer information and other assistance to family members and survivors for each accident or event we investigate. We also serve as the appellate authority for enforcement actions involving aviation and mariner certificates issued by the Federal Aviation Administration (FAA) and US Coast Guard, and we adjudicate appeals of civil penalty actions taken by the FAA.

The NTSB does not assign fault or blame for an accident or incident; rather, as specified by NTSB regulation, “accident/incident investigations are fact-finding proceedings with no formal issues and no adverse parties ... and are not conducted for the purpose of determining the rights or liabilities of any person” (Title 49 *Code of Federal Regulations* section 831.4). Assignment of fault or legal liability is not relevant to the NTSB’s statutory mission to improve transportation safety by investigating accidents and incidents and issuing safety recommendations. In addition, statutory language prohibits the admission into evidence or use of any part of an NTSB report related to an accident in a civil action for damages resulting from a matter mentioned in the report (Title 49 *United States Code* section 1154(b)). A factual report that may be admissible under 49 *United States Code* section 1154(b) is available [here](#).