



# National Transportation Safety Board Aviation Accident Final Report

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<b>Location:</b>	GREENSBURG, IN	<b>Accident Number:</b>	CHI94MA032
<b>Date &amp; Time:</b>	11/06/1993, 0851 EST	<b>Registration:</b>	N41010
<b>Aircraft:</b>	CESSNA 421B	<b>Aircraft Damage:</b>	Destroyed
<b>Defining Event:</b>		<b>Injuries:</b>	5 Fatal

**Flight Conducted Under:** Part 91: General Aviation - Executive/Corporate

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## Analysis

The pilot reported ice accretion en route to his destination and subsequently requested, and received a lower altitude from ATC. The flight was issued a clearance for a VOR-A approach to the Greensburg Airport, and was observed by a witness north of the airport to fly for a short period down runway 18 about seven feet above the runway. The witness then observed the airplane began to climb and fly off in a southerly direction. Other witnesses saw the airplane flying in the vicinity of the airport beneath an overcast ceiling estimated between 300' and 1000' AGL. One witness, located about two miles south of the airport, saw the airplane turn sharply left, drop nose low, recover, drop nose low, and then descend from sight behind trees. Investigators and rescue personnel discovered a large amount of ice debris along the flight path and outside the fire ring at the crash site.

## Probable Cause and Findings

The National Transportation Safety Board determines the probable cause(s) of this accident to be: an inadvertent stall by the pilot in command. Factors associated with the accident are the icing conditions and low ceilings.

## Findings

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Occurrence #1: LOSS OF CONTROL - IN FLIGHT  
Phase of Operation: MISSED APPROACH (IFR)

### Findings

1. (F) WEATHER CONDITION - ICING CONDITIONS
2. WEATHER CONDITION - SNOW
3. (F) WEATHER CONDITION - LOW CEILING
4. MISSED APPROACH - PERFORMED - PILOT IN COMMAND
5. (C) STALL - INADVERTENT - PILOT IN COMMAND

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

## Factual Information

### HISTORY OF FLIGHT

On November 6, 1993, at 0851 eastern standard time, a Cessna 421B airplane, N41010, operated by Road Runner Airlines, Inc., collided with the ground while maneuvering near Greensburg, Indiana. The airline transport pilot and four passengers were fatally injured. The airplane was destroyed by impact and fire. Witnesses described instrument meteorological conditions at the site. The corporate flight originated from Pontiac, Michigan at 0733 on an instrument flight plan and operated under 14 CFR 91.

Road Runner Airlines was owned by the President of Omni Group, a private corporation. The purpose of the flight was to transport Omni's president, the general manager and two guests for a hunting weekend near Greensburg.

The pilot telephoned the Lansing, Michigan Flight Service Station for weather briefing and flight filing at 0617. The briefer informed him of occasional moderate rime or mixed icing in clouds below 8000 feet through Michigan and Indiana. The pilot filed direct to Greensburg at 8000 feet.

At 0827, while the airplane was in radio and radar contact with the Dayton, Ohio air traffic control's north sector, the controller inquired whether the flight was encountering ice at 8000 feet. The pilot responded "a little bit of rime ice." At 0830, N41010 broadcast, "would like to start our descent now," without further explanation. The controller responded, "unable at this time, maintain 8000." A minute later the pilot renewed the request and said "starting to pick up quite a bit of ice." The controller directed him to stand by, and he coordinated with the adjacent sector controller at Indianapolis. At 0832, the Dayton controller directed N41010 to contact Indianapolis with the request.

The pilot reported on the new frequency at 0832 and asked for "lower" describing icing in the same words above. The Indianapolis radar approach controller cleared him to 4000 feet. In response to a traffic call at 0835, N41010 reported it was "IMC." The controller read weather for Indianapolis (40 miles northwest) and issued a vector to the approach course. At 0840, the controller cleared N41010 to 3000 feet.

At 0845, the controller read N41010's position 4 miles from the final approach fix and cleared it for the VOR-A arrival procedure to Greensburg.

At 0847, the controller read N41010's position 1 mile from the fix and cleared the flight to switch to advisory frequency; the pilot acknowledged. At 0848 the controller broadcast loss of radar contact a mile north of the airport; no acknowledgement was received.

A witness north of the airport heard a sudden engine noise and saw a twin-engine airplane about one-third the way down runway 18 and about 7 feet above it. He heard the engines accelerate and the airplane climbed out heading south.

A witness 2 miles south of the airport heard an airplane approach from the west and overfly his house. He saw it flying away about 200 feet above ground, heading north-northeast. Half a mile beyond, the airplane turned sharply left. The turn ended heading northwest, and the airplane dropped nose low. It regained level pitch, dropped nose low again, and descended behind trees. He saw fire erupt behind the trees.

On arriving at the airplane, the latter witness and others found the cabin filled with smoke and heard nothing from inside. Their attempts to enter through the passenger door, a window and the rear pressure bulkhead were unsuccessful, and they were driven back as fire mounted.

#### PERSONNEL INFORMATION

The pilot held an airline transport pilot certificate with multi-engine rating, issued July 20, 1991. He held an instructor pilot certificate with endorsement for single and multi-engine, and instrument airplane. The pilot was hired by the operator as a full-time pilot in September 1992; he was the only company pilot.

The pilot's logs were not found at the site, nor obtained during the investigation. Estimates of his flight time were based on certificate applications and aircraft records. The pilot's December 1992 application for medical certificate reported 2500 hours total flight time, 300 in the preceding 6 months, and listed his employer as Omni. An aircraft utilization record for the accident airplane and its predecessor showed average monthly flight time of 45 to 50 hours since September 1992. Flight time on the accident airplane in the month before the accident was 63 hours. The pilot attended training in the accident model for a week in June, 1993.

#### AIRCRAFT INFORMATION

The airplane was manufactured in 1974. The owner purchased the airplane in June 1993 to replace its Piper PA-34. The airplane was used to carry Omni employees on company business. Omni manufactures painting equipment.

The airplane was configured with pneumatic de-ice boots on wing and tail leading edges, electric de-ice on propeller blades, and electric heat for pitot sources and stall warning. The airplane was not certified for flight into known icing. The windshield lacked de-icing, but had an alcohol spray system to suppress ice accumulation.

The airplane had an annual inspection May 10, 1993. Aircraft records showed oil changes at 50-hour intervals thereafter. No 100-hour inspections were recorded. The airplane was last serviced November 2, 1993; among maintenance items was the windshield alcohol system. The most recent entry of tachometer time was 2594 hours entered October 28, 1993. The engines had about 450 hours since overhaul and the propellers about 220 hours since overhaul. Altimeter, static and transponder systems were verified June 1, 1993.

#### METEOROLOGICAL INFORMATION

Witnesses and responding law enforcement personnel variously described local visibility from .25 to 1.5 miles, and ceiling from 300 to 1000 feet. Precipitation alternated between light snow and drizzle as temperature hovered near freezing.

Content of the pilot's weather briefing is in the appended transcript from Lansing Flight Service Station. Weather data and nearby station observations are also appended.

#### AIDS TO NAVIGATION

There is no navigational aid on the Greensburg airport. The arrival procedure uses the Shelbyville VOR, 25 miles northwest. Minima for the approach are 800 feet ceiling and one mile visibility when weather for Columbus is available. When Indianapolis weather is cited, the required ceiling is increased 120 feet. The arrival procedure places an airplane in the airport vicinity, but does not align with either end of the bi-directional runway.

## COMMUNICATIONS

N41010 was in continuous radio contact with FAA flight control facilities from departure at Pontiac. The pilot made no further report or request after receiving the clearance to descend from cruise altitude. Transcripts of communications with Dayton and Indianapolis air traffic control facilities are appended.

## AERODROME INFORMATION

Greensburg-Decatur County airport has no control tower and is attended on weekdays only.

## WRECKAGE AND INFORMATION

The accident site was about 2 miles south-southeast of the airport on flat terrain. The airplane struck ground in a soybean field, 500 feet south of county road 250S.

The first ground imprints were similar in size and shape of the left elevator horn, tailcone and right elevator horn. Forward of this point by 12 and 17 feet were imprints shaped like the left and right main gear respectively. The main wreckage lay 90 feet from first impact, heading south. The right wing outboard of the engine nacelle lay 80 feet past the airplane. Magnetic heading from first imprint to the most distant wreckage was 300 degrees.

The cockpit, cabin and left wing were destroyed by fire. Fire damaged the stub right wing with engine and its separated span in the distance.

The right propeller hub and associated blades separated from the engine at the flange. The propeller blades exhibited "S" bending, and all the blades were determined to be in a fine, or low pitch position. The left propeller remained on its engine, and the blades were in a position between low pitch and feather. The left propeller blades also displayed "S" bending. A knifed-edged trench extended from the impact imprint to a left propeller blade which was stuck in the ground under the left engine.

All landing gear sheared. The upper nose gear structure jammed vertically into the nose compartment. The flap actuator was extended in a position equivalent to 10 degrees of flaps.

The engine control levers for both engines were found on or near the rear stops. Rescue personnel acknowledged working near them to remove the occupants. Police photos taken before removal show the throttle levers to the rear, and propeller and mixture controls forward.

Ice shards remained on the site the day after accident. The ice was of two forms: curved sections as might form over a rounded surface, and solid cylinders with up to 1.25 inches diameter. State police and county sheriff personnel marked locations of ice shards for 500 feet on the airplane's flight path to impact.

Remains of shotguns were found in the nose compartment. Ammunition was scattered about the site. Nose compartment doors were thrown a short distance and showed no appearance of explosion or shot dimpling.

## MEDICAL AND PATHOLOGICAL INFORMATION

The pilot held a first class medical certificate issued December 2, 1992 without limitation. He was 28 years of age. His certificate application stated no medications were then being taken. The FAA airman medical record contained no remarkable medical history. The report of autopsy remarked no pre-existing disease. Results of toxicological test conducted at the FAA's

Civil Aeromedical Institute were negative.

Autopsy reports on the pilot and 3 passengers indicated death from blunt trauma injuries with aspects of frontal and vertical deceleration. One passenger was determined to have died of carbon monoxide intoxication. All the autopsies were performed at the Indiana School of Medicine, Department of Pathology, Indianapolis, Indiana.

#### FIRE

A fan-shaped burn area radiated from ground impact. Intense fire was apparent about the fuel tanks. No witness recounted smoke or fire from the airplane while in flight. The fire was still smoldering when the rescuers' arrived, then increased in intensity and drove them back from the wreckage. Portions of wreckage thrown clear of the burned area showed no soot or heat damage. Soot deposits and molten metal flow were consistent with a postimpact ground fire.

#### SURVIVAL ASPECTS

Thick smoke had filled the cabin by the time the two witnesses/rescuers arrived at the site. Four occupants died of blunt trauma injuries. The single fatality from smoke inhalation had blunt trauma injuries and remained in his seat position with seatbelt latched. The right side portal remained in place, its latch unopened. The passenger door for the cabin bound in its frame and locks with fuselage compression and could not be opened; the interior handle remained stowed.

#### TESTS AND RESEARCH

The left engine propeller was removed for disassembly and examination. Within the hub, a pitch change link was found bent, restraining the mechanism moving under spring load. Impact imprints between adjacent parts showed their alignment in a low pitch position when imprinted.

#### ADDITIONAL DATA/INFORMATION

Parties to the investigation participated in a discussion of findings before adjournment from the accident locale.

Wreckage and aircraft records were released to the owner's agent.

## Pilot Information

<b>Certificate:</b>	Airline Transport; Commercial	<b>Age:</b>	28, Male
<b>Airplane Rating(s):</b>	Multi-engine Land; Single-engine Land	<b>Seat Occupied:</b>	Left
<b>Other Aircraft Rating(s):</b>	None	<b>Restraint Used:</b>	Seatbelt
<b>Instrument Rating(s):</b>	Airplane	<b>Second Pilot Present:</b>	No
<b>Instructor Rating(s):</b>	Airplane Multi-engine; Airplane Single-engine; Instrument Airplane	<b>Toxicology Performed:</b>	Yes
<b>Medical Certification:</b>	Class 1 Valid Medical--no waivers/lim.	<b>Last FAA Medical Exam:</b>	12/02/1992
<b>Occupational Pilot:</b>		<b>Last Flight Review or Equivalent:</b>	
<b>Flight Time:</b>	2900 hours (Total, all aircraft), 225 hours (Total, this make and model), 145 hours (Last 90 days, all aircraft), 60 hours (Last 30 days, all aircraft)		

## Aircraft and Owner/Operator Information

<b>Aircraft Make:</b>	CESSNA	<b>Registration:</b>	N41010
<b>Model/Series:</b>	421B 421B	<b>Aircraft Category:</b>	Airplane
<b>Year of Manufacture:</b>		<b>Amateur Built:</b>	No
<b>Airworthiness Certificate:</b>	Normal	<b>Serial Number:</b>	421B0569
<b>Landing Gear Type:</b>	Retractable - Tricycle	<b>Seats:</b>	7
<b>Date/Type of Last Inspection:</b>	05/10/1993, Annual	<b>Certified Max Gross Wt.:</b>	7450 lbs
<b>Time Since Last Inspection:</b>	221 Hours	<b>Engines:</b>	2 Reciprocating
<b>Airframe Total Time:</b>	2600 Hours	<b>Engine Manufacturer:</b>	CONTINENTAL
<b>ELT:</b>	Installed, not activated	<b>Engine Model/Series:</b>	GTSIO-520-H
<b>Registered Owner:</b>	ROADRUNNER AIRLINES, INC.	<b>Rated Power:</b>	375 hp
<b>Operator:</b>	OMNI GROUP	<b>Operating Certificate(s) Held:</b>	None
<b>Operator Does Business As:</b>	OMNI ENGINEERING	<b>Operator Designator Code:</b>	

## Meteorological Information and Flight Plan

Conditions at Accident Site:	Instrument Conditions	Condition of Light:	Day
Observation Facility, Elevation:	, 912 ft msl	Distance from Accident Site:	0 Nautical Miles
Observation Time:	0900 EST	Direction from Accident Site:	0°
Lowest Cloud Condition:	Unknown / 400 ft agl	Visibility	1 Miles
Lowest Ceiling:	Overcast / 400 ft agl	Visibility (RVR):	0 ft
Wind Speed/Gusts:	12 knots /	Turbulence Type Forecast/Actual:	/
Wind Direction:	270°	Turbulence Severity Forecast/Actual:	/
Altimeter Setting:		Temperature/Dew Point:	0° C
Precipitation and Obscuration:			
Departure Point:	PONTIAC, MI (PTK)	Type of Flight Plan Filed:	IFR
Destination:		Type of Clearance:	IFR
Departure Time:	0733 EST	Type of Airspace:	Class G

## Airport Information

Airport:	GREENSBURG-DECATUR COUNTY (I34)	Runway Surface Type:	Asphalt
Airport Elevation:	912 ft	Runway Surface Condition:	Wet
Runway Used:	36	IFR Approach:	Circling; VOR
Runway Length/Width:	3433 ft / 40 ft	VFR Approach/Landing:	Valley/Terrain Following

## Wreckage and Impact Information

Crew Injuries:	1 Fatal	Aircraft Damage:	Destroyed
Passenger Injuries:	4 Fatal	Aircraft Fire:	On-Ground
Ground Injuries:	N/A	Aircraft Explosion:	None
Total Injuries:	5 Fatal	Latitude, Longitude:	

## Administrative Information

Investigator In Charge (IIC):	J R VALLASTER	Report Date:	09/13/1994
Additional Participating Persons:	DAVID M ENLOW; INDIANAPOLIS, IN LARRIE M CHAMBERS; INDIANAPOLIS, IN		
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> .		



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The Independent Safety Board Act, as codified at 49 U.S.C. Section 1154(b), precludes the admission into evidence or use of any part of an NTSB report related to an incident or accident in a civil action for damages resulting from a matter mentioned in the report. A factual report that may be admissible under 49 U.S.C. § 1154(b) is available [here](#).