



# National Transportation Safety Board Aviation Accident Final Report

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<b>Location:</b>	ELKINS, WV	<b>Accident Number:</b>	NYC98LA057
<b>Date &amp; Time:</b>	12/28/1997, 1340 EST	<b>Registration:</b>	N1348T
<b>Aircraft:</b>	Cessna 421C	<b>Aircraft Damage:</b>	Destroyed
<b>Defining Event:</b>		<b>Injuries:</b>	1 Minor, 6 None
<b>Flight Conducted Under:</b>	Part 91: General Aviation - Personal		

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## Analysis

The pilot/owner and a flight instructor had flown in to pick-up passengers. The owner was not multiengine rated and was receiving instruction from the instructor. The airplane was fueled and two adults and three children were boarded about 1 hour later. The owner was the flying pilot in the left seat. The owner stated that the 4,500 foot long runway was covered with 2 1/2 to 3 inches of snow and slush. He further stated that during the takeoff roll, 'The snow was so bad we could not get off the ground...' The pilot estimated that he aborted the takeoff at 100 mph, the braking action was zero, and the airplane went off the end of the runway. According to a witness, the five passengers arrived with 'lots of heavy bags.' After the accident, the baggage was removed before it could be weighed. An estimated airplane takeoff weight of 7,856 pounds was computed without baggage, based upon weights from the airplane weight and balance form, the police report, and FAA records. According to the Pilot's Operating Handbook, the maximum takeoff weight was published at 7,560 pounds.

## Probable Cause and Findings

The National Transportation Safety Board determines the probable cause(s) of this accident to be: The flight instructor's failure to identify an unsafe runway condition and his delay in aborting the takeoff. Contributing was the aircraft's maximum takeoff weight exceeded, and a snow-covered runway.

## Findings

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Occurrence #1: OVERRUN

Phase of Operation: TAKEOFF - ABORTED

### Findings

1. (F) AIRPORT FACILITIES, RUNWAY/LANDING AREA CONDITION - SNOW COVERED
  2. (F) AIRCRAFT WEIGHT AND BALANCE - EXCEEDED - PILOT IN COMMAND(CFI)
  3. (C) UNSAFE/HAZARDOUS CONDITION - NOT PERFORMED - PILOT IN COMMAND(CFI)
  4. (C) ABORTED TAKEOFF - DELAYED - PILOT IN COMMAND(CFI)
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Occurrence #2: ON GROUND/WATER ENCOUNTER WITH TERRAIN/WATER

Phase of Operation: TAKEOFF - ABORTED

### Findings

5. TERRAIN CONDITION - GROUND

## Factual Information

On December 28, 1997, about 1340 eastern standard time, a Cessna 421C, N1348T, was destroyed when it overran the runway during an aborted takeoff at the Elkins-Randolph County Airport (EKN), Elkins, West Virginia. The certificated private pilot/owner at the controls received minor injuries. The certificated flight instructor seated in the right seat, and five passengers, were not injured. Visual meteorological conditions prevailed for the personal flight that was destined for Orlando, Florida. An instrument flight rules flight plan had been filed for the flight conducted under 14 CFR Part 91.

According to the pilot/owner, he and the flight instructor had flown to EKN from Orlando, Florida, and arrived about 1 hour prior to the accident takeoff. The airplane was "topped off" with fuel, and the passengers, two adults and three children, were boarded along with their baggage. The owner stated that he occupied the left seat and was the flying pilot. He also stated that the pilot in the right seat was the pilot-in-command (PIC) and "the instructor." The pilot/owner was not multiengine rated.

After the airplane was loaded, the owner taxied the airplane to runway 32, and began the takeoff roll. He stated that during the takeoff roll, "The snow was so bad we could not get off the ground, there was about 2 inches on the runway and at the speed we were going, I'd say 100 mph, when we tried to shut it down, we could not stop and slid straight ahead and hit the ditch."

In another statement the pilot/owner further stated, "On takeoff roll with 2 1/2 to 3 inches of snow and slush, we were unable to get airborne 2/3 off runway, decided to abort takeoff and found zero braking action on remainder of runway..."

The PIC stated that during the takeoff roll, "It looked like we weren't accelerating adequately, we aborted the takeoff and could not stop on the runway. We just slid off the end of the runway to a stop."

According to a witness who observed the takeoff, "I watched him taxi out to the runway and begin his takeoff...we were talking about the pilot not having enough airspeed, then we heard him remove his power from his engines and we knew he would have problems stopping..."

According to another witness:

"I watched the Cessna 421 begin his take-off roll. The nose wheel left the ground early, to what I thought was too high. The nose stayed up as the main gear left the ground, and then settled back and lifted off again. I watched this happen twice and became very concerned...We arrived very soon after they had come to a stop..."

A letter requesting passenger statements was sent out; however, no reply was received as of March 22, 1999.

When the airplane arrived at EKN, it was fueled with 159 gallons. In the NTSB Form 6120.1/2, the pilot listed the takeoff fuel to be 234 gallons, or full fuel. According to a witness at the airport, the five passengers arrived with "lots of heavy bags." After the accident, the baggage was removed before it could be weighed. An estimated airplane takeoff weight of 7,856 pounds was computed without baggage, based upon weights from the airplane weight and balance form, the police report, and FAA records. According to the Pilot's Operating Handbook, the maximum takeoff weight was published at 7,560 pounds.

## Pilot Information

<b>Certificate:</b>	Airline Transport; Flight Instructor; Commercial	<b>Age:</b>	56, Male
<b>Airplane Rating(s):</b>	Multi-engine Land; Single-engine Land	<b>Seat Occupied:</b>	Right
<b>Other Aircraft Rating(s):</b>	None	<b>Restraint Used:</b>	Seatbelt, Shoulder harness
<b>Instrument Rating(s):</b>	Airplane	<b>Second Pilot Present:</b>	Yes
<b>Instructor Rating(s):</b>	Airplane Multi-engine; Airplane Single-engine; Instrument Airplane	<b>Toxicology Performed:</b>	No
<b>Medical Certification:</b>	Class 2 Valid Medical--w/ waivers/lim.	<b>Last FAA Medical Exam:</b>	05/20/1997
<b>Occupational Pilot:</b>	<b>Last Flight Review or Equivalent:</b>		
<b>Flight Time:</b>	3100 hours (Total, all aircraft), 60 hours (Total, this make and model), 42 hours (Last 90 days, all aircraft)		

## Aircraft and Owner/Operator Information

<b>Aircraft Make:</b>	Cessna	<b>Registration:</b>	N1348T
<b>Model/Series:</b>	421C 421C	<b>Aircraft Category:</b>	Airplane
<b>Year of Manufacture:</b>		<b>Amateur Built:</b>	No
<b>Airworthiness Certificate:</b>	Normal	<b>Serial Number:</b>	421C1059
<b>Landing Gear Type:</b>	Retractable - Tricycle	<b>Seats:</b>	7
<b>Date/Type of Last Inspection:</b>	07/03/1997, Annual	<b>Certified Max Gross Wt.:</b>	7560 lbs
<b>Time Since Last Inspection:</b>	90 Hours	<b>Engines:</b>	2 Reciprocating
<b>Airframe Total Time:</b>	3593 Hours	<b>Engine Manufacturer:</b>	Continental
<b>ELT:</b>	Installed, activated, did not aid in locating accident	<b>Engine Model/Series:</b>	GSIO-520
<b>Registered Owner:</b>	DAVID K. HACKETT	<b>Rated Power:</b>	375 hp
<b>Operator:</b>	DAVID K. HACKETT	<b>Operating Certificate(s) Held:</b>	None
<b>Operator Does Business As:</b>	GOLDEN EAGLE AVN, LLC	<b>Operator Designator Code:</b>	

## Meteorological Information and Flight Plan

Conditions at Accident Site:	Visual Conditions	Condition of Light:	Day
Observation Facility, Elevation:	EKN, 1987 ft msl	Distance from Accident Site:	0 Nautical Miles
Observation Time:	1351 EST	Direction from Accident Site:	0°
Lowest Cloud Condition:	Scattered / 3100 ft agl	Visibility	10 Miles
Lowest Ceiling:	None / 0 ft agl	Visibility (RVR):	0 ft
Wind Speed/Gusts:	Light and Variable /	Turbulence Type Forecast/Actual:	/
Wind Direction:	Variable	Turbulence Severity Forecast/Actual:	/
Altimeter Setting:	29 inches Hg	Temperature/Dew Point:	3° C / 9° C
Precipitation and Obscuration:			
Departure Point:	(EKN)	Type of Flight Plan Filed:	IFR
Destination:	ORLANDO, FL (ORL)	Type of Clearance:	IFR
Departure Time:	1340 EST	Type of Airspace:	Class E

## Airport Information

Airport:	ELKINS-RANDOLPH COUNTY (EKN)	Runway Surface Type:	Asphalt
Airport Elevation:	1987 ft	Runway Surface Condition:	Snow--wet
Runway Used:	32	IFR Approach:	None
Runway Length/Width:	4543 ft / 150 ft	VFR Approach/Landing:	None

## Wreckage and Impact Information

Crew Injuries:	1 Minor, 1 None	Aircraft Damage:	Destroyed
Passenger Injuries:	5 None	Aircraft Fire:	On-Ground
Ground Injuries:	N/A	Aircraft Explosion:	None
Total Injuries:	1 Minor, 6 None	Latitude, Longitude:	

## Administrative Information

Investigator In Charge (IIC):	ROBERT L PEARCE	Report Date:	02/29/2000
Additional Participating Persons:	EDWARD SHIELDS; CHARLESTON, WV		
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 <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](#).