



# National Transportation Safety Board Aviation Accident Final Report

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<b>Location:</b>	MAIDEN, NC	<b>Accident Number:</b>	MIA98FA055
<b>Date &amp; Time:</b>	01/09/1998, 1704 EST	<b>Registration:</b>	N913FE
<b>Aircraft:</b>	Cessna 208B	<b>Aircraft Damage:</b>	Substantial
<b>Defining Event:</b>		<b>Injuries:</b>	1 Fatal
<b>Flight Conducted Under:</b>	Part 91: General Aviation - Positioning		

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## Analysis

The pilot was reported to be in a hurry as he positioned two aircraft and picked up the accident aircraft for his final positioning leg. He told company personnel he had a birthday party to go to and his family confirmed this. The pilot reported to company personnel that he was departing on runway 3 and that he would report in on his arrival at the destination. No further contacts with the flight were made and the wreckage of the aircraft was discovered off the end of the departure runway about 40 minutes after his reported takeoff. Examination showed the aircraft had run off the left side of the runway about 800 feet from the end and then crossed over the runway and entered into the woods at the departure end of the runway. Postcrash examination showed no evidence of precrash failure or malfunction of the aircraft structure, flight controls, or engine. The onboard engine computer showed the engine was producing normal engine power and the aircraft was traveling at 98 knots when electrical power was lost as it collided with trees. The aircraft's control lock was found tangled in the instrument panel near the left control yoke where it is normally installed and the lock had multiple abnormal bends, including a 90 degree bend in the last 1/2 inch of the lock where it engages the control column. Removal of the control lock and checking the flight controls for freedom is on the normal pilots checklist. The pilot was also found to not be wearing his shoulder harness.

## Probable Cause and Findings

The National Transportation Safety Board determines the probable cause(s) of this accident to be: The pilot's failure to remove the control lock prior to takeoff and his failure to abort the takeoff when he was unable to initiate a climb, resulting in the aircraft over running the runway and colliding with trees on the departure end of the runway. Contributing to the accident was the pilot's self-induced pressure to arrive at his destination to attend a family affair.

## Findings

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Occurrence #1: OVERRUN

Phase of Operation: TAKEOFF - ROLL/RUN

Findings

1. (C) REMOVAL OF CONTROL/GUST LOCK(S) - NOT PERFORMED - PILOT IN COMMAND
2. (C) SELF-INDUCED PRESSURE - PILOT IN COMMAND
3. (C) CLIMB - NOT POSSIBLE - PILOT IN COMMAND
4. (C) ABORTED TAKEOFF - NOT PERFORMED - PILOT IN COMMAND

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Occurrence #2: ON GROUND/WATER COLLISION WITH OBJECT

Phase of Operation: TAKEOFF - ROLL/RUN

Findings

5. OBJECT - TREE(S)

## Factual Information

### History of the Flight

On January 9, 1998, about 1704 eastern standard time, a Cessna 208B, N913FE, registered to Federal Express Corporation, and operated by Mountain Air Cargo, Inc., crashed during takeoff from Little Mountain Airport, Maiden, North Carolina, while on a Title 14 CFR Part 91 positioning flight to Greensboro, North Carolina. Visual meteorological conditions prevailed at the time and no flight plan was filed. The aircraft was destroyed and the commercial-rated pilot was fatally injured. The flight was originating at the time of the accident.

Company records showed that on the date of the accident, the accident pilot flew a roundtrip revenue flight from Greensboro to Wilmington, North Carolina, between 0704 and 0929. According to the pilot's family, he then drove home to Chapel Hill, North Carolina, from Greensboro. At about 1230, the pilot was called to go back to Greensboro to position a Cessna 208B, N769FE, from Greensboro to Huntington, West Virginia, position a Cessna 208B, N749FX, from Huntington to the maintenance base at Maiden, and position a Cessna 208B, N913FE, from Maiden to Greensboro. The pilot departed Greensboro in N769FE, under an instrument flight rules flight plan, at about 1400 and arrived at Huntington at about 1520.

A witness on the ground at Huntington stated that when the accident pilot arrived in N769FE, he seemed to be in a hurry. The witness stated he was towing N749FX, the aircraft the pilot was to depart in, from the parking area and the pilot would not wait for him to stop before loading his flight bag. As he was towing N769FE back to the parking place, he noticed the pilot had already started the engine of N749FX and was starting to taxi for takeoff with the baggage door open. He went out and flagged down the pilot and closed the baggage door for him. The pilot who flew N769FE after the accident pilot delivered it to Huntington stated that when he got to the aircraft it appeared the accident pilot was "really in a big hurry." The pitot covers and engine covers had not been installed and he found the crew compartment door unlocked and the battery still hooked up.

The pilot departed Huntington, under an instrument flight rules flight plan, at about 1545. Company personnel stated the pilot radioed to flight operations at Maiden when he was about 10 minutes from landing. He asked if he had to come up to operations and they responded "yes, you have to come to operations." He reported he had a birthday party to go to. The pilot arrived in N749FX at about 1647 and as he taxied to park the aircraft in front of the maintenance hangar, the left main gear and nose gear went off the taxiway into the mud. Maintenance personnel stated the pilot appeared to be in a hurry and operations personnel stated the pilot came to operations, dropped his paper work, and immediately left, stating again he had a birthday party to go to.

The pilot departed the ramp in N913FE shortly after 1700. He radioed on the company radio frequency a short time later that he was departing on runway 3 and that he would report on arrival in Greensboro. No further contact with the pilot was made. The aircraft wreckage was located off the departure end of runway 3 at about 1745.

### Personnel Information

Information on the pilot is contained in this report under First Pilot Information and in attachments to this report.

## Aircraft Information

Information on the aircraft is contained in this report under Aircraft Information and in attachments to this report.

## Meteorological Information

Visual meteorological conditions prevailed at the time of the accident. Additional meteorological information is contained in this report under Weather Information.

## Flight Recorders

The Cessna 208B aircraft operated by Mountain Air Cargo, Inc. are equipped with Avionics Specialties, Inc., Power Analyzer and Recorder (PAR). The PAR records each engine start by date and time and includes engine parameters and pressure altitude, airspeed, and outside air temperature. The PAR also records each engine shutdown and calculates the engine run time, flight time, and number of landings. The PAR will also record engine parameters, pressure altitude, airspeed, and outside air temperature when electrical power from the aircraft is lost to the unit. This is accomplished by a battery in the PAR. Stored data in the PAR can be retrieved by a portable computer.

After the accident with N913FE, the PAR units from N769FE, N749FX, and N913FE were readout. The accident pilot flew N769FE from Greensboro, NC, to Huntington, WV. The PAR clock was found to be running eight minutes slow and the engine start time at Greensboro was recorded as 1847:08 UTC. This made the actual engine start time as 1355:08 EST. The actual engine shutdown time at Huntington was 1521:30 EST.

The accident pilot flew N749FX from Huntington to Maiden, NC. Readout of the PAR showed the clock was running nine minutes slow. The actual engine start time at Huntington was 1539:55 EST. The actual engine shutdown at Maiden was 1650:31 EST.

Readout of the PAR installed on N913FE showed the clock was three minutes slow. The actual engine start was recorded at 1700:18 EST. At actual time 1703:46 EST, the PAR loses electrical power from the aircraft and recorded data using the units battery. The engine NG was 90.3%, the NP was 1,895 RPM, the fuel flow was 317 PPH, the torque was 1,230 FLB, the ITT was 651 degrees centigrade, the pressure altitude was 968 feet, indicated airspeed was 98 knots, and the outside air temperature was 11 degrees centigrade. See attached PAR readout reports.

## Wreckage and Impact Information

The aircraft crashed in a wooded area off the departure end of runway 3 at the Little Mountain Airport, Maiden, North Carolina. Postcrash examination of the runway showed the aircraft was still rolling on the 3,000-foot-long runway, about 800 feet from the departure end. The aircraft drifted to the left off the runway at this point and ran over a runway light about 500 feet from the departure end. The aircraft returned to the runway about 400 feet from the departure end and then proceeded across the runway and went off the right side of the runway near the departure end. The aircraft continued on a 040-degree heading and as the terrain dropped off the aircraft became airborne. The aircraft collided with trees where it came to rest about 500 feet from the departure end of the runway and 75 feet to the right of the extended centerline.

Postcrash examination of the crash site showed that as the aircraft traveled through

trees, the propeller contacted limbs severing them and causing separation of the three composite propeller blades. Both wings were damaged and bent aft by tree impact forces and the tail section was bent to the right. The left side of the engine and cockpit area received damage from impact with a tree. All components of the aircraft which are necessary for flight were located on or around the main wreckage. Continuity of the flight control system was established. The engine continued to operate after the aircraft came to rest, leaving a hole in the ground from the propeller blade stubs and throwing dirt onto surrounding trees.

Postcrash examination of the engine showed it rotated normally and all accessory drive gears and accessories rotated normally. Uncontaminated fuel was found in the engine fuel system. Postcrash examination of the propeller showed each blade had separated due to impact with trees and that the propeller had no signs of mechanical failure or malfunction.

Postcrash examination of the aircraft cockpit showed the flight control lock was tangled in the instrument panel adjacent to the left control column where it is normally installed. The lock pin had several abnormal bends in it, including a 90-degree bend in the last 1/2 inch of the pin. Company personnel stated the control lock is normally stored on the cargo net behind the pilot's seat. Additionally, the pilot's shoulder harnesses were found in the stored position and were not being used by the pilot.

#### Medical and Pathological Information

Postmortem examination of the pilot was performed by Dr. Lee Ann Grossberg Krishnan, Pathologist, Office of the Medical Examiner, Chapel Hill, North Carolina. The cause of death was attributed to blunt force injury to head and neck. No findings which could be considered causal to the accident were reported. Postmortem toxicology studies on specimens obtained from the pilot were performed by the Office of the Medical Examiner and by Dr. Dennis V. Canfield, Manager, FAA Toxicology Laboratory, Oklahoma City, Oklahoma. The studies were negative for ethanol alcohol, carbon monoxide, cyanide, marijuana, basic, acidic, and neutral drugs. Additional medical and pathological information is contained in Supplement K and in the attached toxicology reports.

The pilot's family reported he had been sick with the flu the week prior to the accident and that he had only returned to work the day before the accident. The pilot had visited a doctor, but was not taking any prescription medications. The pilot's mother stated he was still not feeling well on the day of the accident. Family members also stated the pilot was scheduled to be back in Chapel Hill for a birthday party at 1800.

Company pilots who saw the accident pilot at Greensboro on the morning of the accident day stated the pilot appeared to be in good spirits and that nothing appeared out of the ordinary.

#### Additional Information

The aircraft wreckage was released to Mr. William C. Brooks, Director of Maintenance, Mountain Air Cargo, Maiden, North Carolina. Components retained by NTSB for further examination were released to Mountain Air Cargo.

A review of the Mountain Air Cargo Cessna 208B normal pilot operating checklist showed that during the before start check, the pilot is required to fasten the seat belt and harness and remove the flight control lock. He is then required to check the flight controls for freedom of movement. When entering the runway for takeoff, the pilot is again required to

check the flight controls for freedom of movement. The checklist also shows that at the weight N913FE was taking off, the normal rotation speed was 70 knots. See attached checklist.

Title 14 CFR Part 91.105b requires that a pilot shall fasten the shoulder harness during takeoff and landing.

An inventory of the pilot's flight bag after the accident showed that the instrument approach charts he was carrying were expired. The pilot had flown four flights on the day of the accident under instrument flight rules. Company personnel stated that pilots are given an allowance and are required to purchase and maintain current instrument approach charts and maps. The Mountain Air Cargo, Inc. Company Operations Manual states the pilot-in-command will have current instrument approach charts available on all flights. See attached pilot records and company operations manual pages.

Additional parties to the NTSB investigation were:

Joseph A. Hutterer 67277	Cessna Aircraft Company	Wichita, Kansas
William C. Brooks Carolina 28650	Mountain Air Cargo	Maiden, North
Thomas A. Berthe Quebec Canada	Pratt and Whitney Engines	Longueuil,
Tom McCreary	Hartzell Propellers	Piqua, Ohio 45356

## Pilot Information

<b>Certificate:</b>	Commercial	<b>Age:</b>	29, 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 Single-engine	<b>Toxicology Performed:</b>	Yes
<b>Medical Certification:</b>	Class 1 Valid Medical--no waivers/lim.	<b>Last FAA Medical Exam:</b>	01/13/1997
<b>Occupational Pilot:</b>	<b>Last Flight Review or Equivalent:</b>		
<b>Flight Time:</b>	4030 hours (Total, all aircraft), 860 hours (Total, this make and model), 3900 hours (Pilot In Command, all aircraft), 89 hours (Last 90 days, all aircraft), 24 hours (Last 30 days, all aircraft), 5 hours (Last 24 hours, all aircraft)		

## Aircraft and Owner/Operator Information

Aircraft Make:	Cessna	Registration:	N913FE
Model/Series:	208B 208B	Aircraft Category:	Airplane
Year of Manufacture:		Amateur Built:	No
Airworthiness Certificate:	Normal	Serial Number:	208B00013
Landing Gear Type:	Tricycle	Seats:	2
Date/Type of Last Inspection:	01/07/1998, AAIP	Certified Max Gross Wt.:	8750 lbs
Time Since Last Inspection:	0 Hours	Engines:	1 Turbo Prop
Airframe Total Time:	6183 Hours	Engine Manufacturer:	P&W
ELT:	Installed, activated, did not aid in locating accident	Engine Model/Series:	PT6A-114
Registered Owner:	FEDERAL EXPRESS CORPORATION	Rated Power:	600 hp
Operator:	MOUNTAIN AIR CARGO, INC.	Operating Certificate(s) Held:	Supplemental; On-demand Air Taxi (135)
Operator Does Business As:	MOUNTAIN AIR CARGO	Operator Designator Code:	MTNA

## Meteorological Information and Flight Plan

Conditions at Accident Site:	Visual Conditions	Condition of Light:	Day
Observation Facility, Elevation:	CLT, 749 ft msl	Distance from Accident Site:	24 Nautical Miles
Observation Time:	1651 EST	Direction from Accident Site:	170°
Lowest Cloud Condition:	Clear / 0 ft agl	Visibility	25 Miles
Lowest Ceiling:	None / 0 ft agl	Visibility (RVR):	0 ft
Wind Speed/Gusts:	9 knots /	Turbulence Type Forecast/Actual:	/
Wind Direction:	210°	Turbulence Severity Forecast/Actual:	/
Altimeter Setting:	29 inches Hg	Temperature/Dew Point:	13° C / 4° C
Precipitation and Obscuration:			
Departure Point:	(66A)	Type of Flight Plan Filed:	None
Destination:	GREENSBORO, NC (GSO)	Type of Clearance:	None
Departure Time:	1704 EST	Type of Airspace:	Class G

## Airport Information

Airport:	LITTLE MOUNTAIN AIRPORT (66A)	Runway Surface Type:	Asphalt
Airport Elevation:	968 ft	Runway Surface Condition:	Dry
Runway Used:	3	IFR Approach:	
Runway Length/Width:	3000 ft / 100 ft	VFR Approach/Landing:	

## Wreckage and Impact Information

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

## Administrative Information

Investigator In Charge (IIC):	JEFFREY L KENNEDY	Report Date:	02/15/2001
Additional Participating Persons:	ROBERT J SCHILLING; CHARLOTTE, NC SAMUEL M STREET; MAIDEN, NC ALAN W RAY; MEMPHIS, TN GEORGE WIGGAM; MEMPHIS, TN		
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:pubinquiry@ntsb.gov">pubinquiry@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.

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](#).