



National Transportation Safety Board Aviation Accident Final Report

Location:	NORTH BEND, OR	Accident Number:	SEA99FA041
Date & Time:	03/08/1999, 2145 PST	Registration:	N41096
Aircraft:	Cessna 421B	Aircraft Damage:	Substantial
Defining Event:		Injuries:	2 Fatal
Flight Conducted Under:	Part 91: General Aviation - Personal		

Analysis

Witnesses reported hearing the engines start and shortly thereafter, the airplane taxied to the runway. The pilot then contacted ATC for an IFR clearance. The clearance was given with a short void time. The pilot acknowledged the clearance and began the takeoff ground roll. Witnesses reported that the night-time takeoff roll and engine sound appeared normal. Witnesses near the end of the runway reported that the airplane was observed at about 50 feet above the runway with about 1,000 feet of runway remaining when engine power was reduced on both engines. The airplane was heard to touch down, then engine power was reapplied. Shortly thereafter, the sound of the impact was heard. The airplane collided with the terrain about 600 feet from the end of the runway. During the post-accident inspection of the airplane and engines, no evidence was found to indicate a mechanical failure or malfunction. Documentation of the events indicated that from the time the aircraft began its taxi to the runway, to the time the takeoff roll began, was approximately six minutes in duration. Before the takeoff roll began, the pilot had accepted a clearance with a void time of four minutes. By the time the pilot correctly read back the clearance, less than two minutes remained before the void time. Post accident documentation of the accident site revealed that neither the pilot nor the passenger were wearing their lap belts or shoulder harnesses. It was also noted that the pilot had not yet selected the discrete transponder code as indicated by the clearance.

Probable Cause and Findings

The National Transportation Safety Board determines the probable cause(s) of this accident to be:
A delayed aborted takeoff for an undetermined reason.

Findings

Occurrence #1: IN FLIGHT COLLISION WITH TERRAIN/WATER
Phase of Operation: TAKEOFF - ABORTED

Findings

1. TERRAIN CONDITION - DIRT BANK/RISING EMBANKMENT
2. (C) ABORTED TAKEOFF - DELAYED - PILOT IN COMMAND
3. REASON FOR OCCURRENCE UNDETERMINED
4. MISC EQPT/FURNISHINGS, SEAT BELT - NOT ENGAGED

Factual Information

HISTORY OF FLIGHT

On March 8, 1999, about 2145 Pacific standard time, a Cessna 421B, N41096, registered to and operated by the pilot as a 14 CFR Part 91 personal flight, aborted takeoff from the North Bend Municipal Airport, North Bend, Oregon, and collided with the terrain about 600 feet from the end of runway 13. Visual meteorological conditions prevailed at the time and an instrument flight rules flight plan was filed. The airplane was substantially damaged and the private pilot and his passenger were fatally injured. The flight's destination was to Aurora, Oregon.

The Operations agent located at the terminal building who was monitoring the North Bend Unicom frequency (122.7) and taking weather observations, reported that he heard the aircraft's engines start. Shortly thereafter, he saw the aircraft taxi to runway 13, at about 2135. The pilot did not make radio contact or report his position over the Unicom frequency as he was taxiing out. The agent reported that as the aircraft was positioned near the threshold of runway 13, he heard the pilot contact McMinnville Flight Service Station (FSS) at 2138, requesting an IFR clearance. After the clearance was received at 2141, the agent observed the aircraft begin its takeoff roll. The agent stated that the landing and taxi lights were on during the roll.

Witnesses located at various points along the south side of the runway reported that the engines sounded like they were developing full power, and the takeoff roll appeared normal. Towards the end of runway 13, at approximately taxiway A3, four U.S. Coast Guard mechanics were working on the ramp and heard the aircraft on the runway. The mechanics reported that the engines sounded normal and were developing full power. One of the mechanics reported that he looked up and saw the aircraft at about 50 feet above ground level over taxiway A3. The mechanics stated that, at this point, they heard a power reduction on both engines. The one mechanic lost sight of the aircraft, but reported that he heard the sound of the tires screech on the runway surface. After this sound, the mechanics heard the engine power being reapplied. Seconds later, the mechanics heard the sound of the impact and they responded to the accident site.

PERSONNEL INFORMATION

At the time of the accident, the pilot held a private pilot certificate with an instrument rating in single and multi-engine land aircraft. Only flight logbooks one and five were located and provided by a family representative for a review of the pilot's flight time. Logbook five indicated that the first flight in N41096 was on February 6, 1997. The last entry in the logbook was dated March 28, 1997, in N41096. Other flights dating back to 1995, indicated flight time in another Cessna 421. Utilizing the available flight logbooks and the maintenance logbooks for N41096, it is estimated that the pilot had accumulated a total flight time in all aircraft of approximately 1,220 hours, with approximately 287 hours in multi-engine aircraft. Approximately 135 hours had been accumulated in the Cessna 421. Total night flight or night currency could not be determined. The maintenance logbooks indicate that the aircraft had accumulated 12 hours of flight time in the 90 days preceding the accident.

Records obtained from SIMCOM Training Center, Scottsdale, Arizona, indicated that the pilot had satisfactorily accomplished an instrument competency check on February 20, 1999. No logbook entries for this training or flight time were logged in the flight logbooks that were

provided for review.

Medical records obtained from the Federal Aviation Administration Airmen Records, Oklahoma City, Oklahoma, indicated that the pilot held a third class medical certificate dated October 6, 1998. A limitation indicating that the pilot shall possess glasses that correct for near vision was noted. At this time, the pilot reported a total flight time of 1,200 total flight hours.

COMMUNICATIONS

At 1448, the pilot contacted McMinnville FSS and requested a weather briefing for an IFR flight from North Bend to Aurora State. The pilot indicated that he expected to leave in about two hours. The specialist briefed the pilot on the conditions and asked the pilot if he wanted to file the flight plan. The pilot stated that he did not, as his passenger had not yet arrived and he did not know exactly when they would be departing. The conversation ended at 1454.

At 2102, the pilot again contacted McMinnville FSS, and reported that he would be leaving North Bend in 30 minutes and requested a weather update. The specialist briefed the pilot as to the weather conditions for the route of flight. The pilot then filed the IFR flight plan. After some discussion with the specialist, the pilot filed using the published Standard Instrument Departure (SID). The SID is the North Bend Four Departure via the Rares transition. The conversation ended at 2110.

At 2138, the pilot contacted McMinnville FSS and reported that he was on the ground at North Bend and ready to copy the IFR clearance to Aurora State. The specialist contacted Seattle Center and received the clearance, which was then relayed to the pilot at 2139. The clearance read:

"Cleared from the North Bend Airport to the Aurora State Airport via the North Bend Four Departure, Rares transition, Victor 287 as filed. Maintain 6,000 feet. Squawk 4677, and contact Seattle Center on 121.4 leaving 2,000 feet. Clearance void if not off by 0543 (2143 PST)."

The North Bend Four Departure, Rares transition states that after takeoff from runway 13, turn right and climb via the North Bend 250 degree radial to 1,300 feet, then a climbing right turn direct to the North Bend VOR. The Rares transition from the VOR indicates a 005 degree heading via Victor 287 to Rares intersection, 16 Distance Measuring Equipment (DME) miles from the VOR.

The pilot correctly read back the clearance, except for the void time. The pilot stated that the clearance was void if not off in five minutes. The specialist corrected the pilot and stated that the clearance was void if he was not off in the next minute and three-quarters. The time was 2141:16. The pilot thanked the specialist, and the conversation ended at 2141:21.

At 2147, the specialist at McMinnville FSS and the controller at Seattle Center reported that they had not heard from the pilot since the last transmission. The controller at Seattle Center reported that he had someone (a Horizon Airlines flight) waiting to come inbound, and asked the specialist that if he heard from the pilot, to give him a call.

AERODROME INFORMATION

Directly off the end of the runway pavement, the terrain is level and grass covered. This grass area extends beyond the width of the runway, and is approximately 135 feet in length. The terrain then descends about 30-40 feet into a marsh area. The length of the marsh area

extends approximately 465 feet to the airport boundary fence, and is approximately 300 feet wide. The terrain raises back up to approximately the runway elevation at the boundary fence.

WRECKAGE AND IMPACT INFORMATION

The aircraft came to rest at the top of the embankment with the nose of the airplane positioned about three feet inside of the airport boundary fence. The aircraft was aligned on a magnetic bearing of approximately 130 degrees and was about 30-feet south of runway centerline. The terrain directly behind the aircraft descended about 30-feet to the bottom of the marsh. The terrain was soft, wet and covered with grass and brush.

The fuselage remained intact. The forward section of the fuselage and wings were resting on the ground. The empennage extended out over the descending terrain.

The left main landing gear and nose landing gear separated from the aircraft. The left main landing gear was found about five feet behind the left wing. The nose gear was found at the base of the embankment, about ten feet behind the empennage. The right main landing gear partially separated and was collapsed under the right wing.

Impact signatures indicate that the aircraft collided with the top of a five-foot high bush located about 77 feet northwest of the wreckage. About 30 feet southeast of the bush, a ground impact signature was noted on the soft ground and grass. The ground signature was narrow and extended to the base of the embankment leading up to the right main landing gear. About 23 feet from the beginning of the ground signature, the right main landing gear door was located. Another impact signature was located northeast and parallel to the first ground signature. This second ground signature began at approximately the same distance from the bush as the first, and was about four-feet in length and about two-feet deep. The ground signature was at the base of a three-foot high ledge by the water.

The incline of the embankment began about 53 feet from the bush. At the base of the embankment, small trees of about six to eight inches in diameter displayed impact damage. These trees were located on the left side of the airplane. The left wing was positioned next to the trees. The entire section of the left wing outboard of the engine was broken aft. The inboard section from the engine to the wing root remained intact. Circular indentations were noted along the outboard leading edge at about 28 inches and 84 inches from the engine. The fuel tank was compromised. The left wing tip-tank separated from the wing and was found against the boundary fence. Light-blue colored fuel remained in the tip-tank. The left flap remained attached at the hinges and was in the retracted position. The aileron remained attached at the inboard hinge. The outboard hinge separated aft. The aileron trim remained attached. The trim tab was positioned to neutral. The left engine remained encased in the cowling. The propeller hub remained attached to the crankshaft. Propeller blade A was bent aft with minor twisting. The tip was torn off. Propeller blade B was bent forward at the tip. The tip was torn off. Propeller blade C was bent aft about 90 degrees.

The right wing remained attached to the wing root. The leading edge of the wing from the wing root to the engine displayed rearward crushing along the entire length. The engine remained encased in the cowling. The propeller hub remained attached to the crankshaft. Propeller blade A displayed leading edge gouging and was bent aft about 30 degrees. Slight "S" bending deformation was noted. Propeller blade B displayed slight "S" bending deformation. Trailing edge gouging was noted near the tip. Propeller blade C was bent aft about 60 degrees. Leading edge gouging was noted about five inches from the tip. The outboard section of the wing

remained intact. The fuel tank remained intact and contained light-blue colored fuel. Leading edge damage was noted about two feet outboard of the engine. About 72 inches further outboard along the leading edge, an indentation was noted. The leading edge skin from this point to the wing tip was torn forward. The tip-tank separated from the wing and was found about five feet away. Light-blue colored fuel remained in the tip tank. The flap remained attached at the hinges and was retracted. The aileron remained attached at its hinges.

The empennage section remained intact. Leading edge damage was noted to the left side horizontal stabilizer. Upon closer examination of the indentation, white paint transfer marks were noted. The elevator trim tab was estimated to be six degrees down. The vertical stabilizer remained intact with the rudder attached at its respective hinges. The rudder trim was estimated to be positioned six degrees to the left.

The area along the right side of the nose displayed upward and aft crushing. The nose baggage door on the right side separated. The aft hinge on the door was broken. The forward hinge was not damaged. However, the forward section of the door was deformed. The door frame was also deformed. The two left side baggage door hinges were either broken or pulled out. No baggage was found in the compartment.

Control system continuity was established from the wings and empennage to the cabin area. Structural damage in the cockpit area impeded continued examination. Interior examination of the cockpit revealed that many of the switches were in the off position. It was later learned that one of the responding rescue personnel had turned off the master and electrical switches. Rescue personnel reported that electrical power was still on after the accident sequence. It was also noted that neither one of the transponders were displaying the discrete code of 4677 that was indicated for the departure clearance. The 1200 code was displayed on both units.

The left side fuel selector was found in the left main tank position. The right side fuel selector was found in the right auxiliary position.

Examination of the landing gear actuator rods and motor assembly revealed that all three landing gear were in the down position.

Fueling records obtained from the airport and a statement made by the fueller indicated that the main and auxiliary fuel tanks were topped off with 97.6 gallons of 100LL fuel. No fuel was added to the wing locker fuel tanks. The wing locker fuel tanks appeared to be empty at the accident site.

MEDICAL AND PATHOLOGICAL

An autopsy was performed by L. Samuel Vickers, M.D., Lane County Medical Examiner, Eugene, Oregon. The cause of the pilot's death was due to open frontal skull fractures with brain contusions and lacerations, due to blunt impact to the head.

Toxicological samples were sent to the Federal Aviation Administration Civil Aeromedical Institute, Oklahoma City, Oklahoma, for analysis. The results of the analysis were negative.

SURVIVAL ASPECTS

Two mechanics from the U.S. Coast Guard were first on site. One of the mechanics reported that the cabin door handle broke in his hand and he was unable to open the door. The mechanics then broke the door window and were then able to open the door and enter the aircraft. The mechanics reported that as they began checking on the occupants, they noted that

neither one of them had on a lap belt or should harness. Baggage that was inside of the aircraft had all moved forward and rescue personnel had to move the items out of the way to gain access to the occupants. The baggage consisted of several reams of paperwork from the pilot's business, two overnight bags, and five "E" size aluminum medical oxygen cylinders. Four of the cylinders were loose, while the fifth cylinder was attached to an oxygen cylinder caddy. The cylinders were about four feet in length, about six inches in diameter and weighed about 15 pounds each. All of the cabin seats had been removed. No straps or cargo nets were found.

ADDITIONAL DATA/INFORMATION

Taxiway A3 is located approximately 3,525 feet from the threshold of runway 13. From taxiway A3 to the end of the runway is approximately 1,090 feet. The U.S. Coast Guard mechanic stated that he saw the aircraft at about 50-feet above ground level at about taxiway A3 when the engine noise decreased. No marks were found on the runway to determine the aircraft's touchdown point. No ground signatures were found off the end of the runway edge. Airport personnel searched the runway and area for any signs of foreign object debris. None were found.

Both engines were transported to Teledyne Continental Motors, Mobile, Alabama, for inspection and preparation for a test run. Both engines exhibited impact damage, however, after replacement of various parts that had been damaged during the accident sequence, both engines ran smoothly and accelerated normally. See attached Teledyne Continental Motors Analytical Inspection Reports for a list of the replacement parts and engine test run results.

Pilot Information

Certificate:	Private	Age:	48, Male
Airplane Rating(s):	Multi-engine Land; Single-engine Land	Seat Occupied:	Left
Other Aircraft Rating(s):	None	Restraint Used:	
Instrument Rating(s):	Airplane	Second Pilot Present:	No
Instructor Rating(s):	None	Toxicology Performed:	Yes
Medical Certification:	Class 3 Valid Medical--w/ waivers/lim.	Last FAA Medical Exam:	10/06/1998
Occupational Pilot:		Last Flight Review or Equivalent:	
Flight Time:	1220 hours (Total, all aircraft), 135 hours (Total, this make and model)		

Aircraft and Owner/Operator Information

Aircraft Make:	Cessna	Registration:	N41096
Model/Series:	421B 421B	Aircraft Category:	Airplane
Year of Manufacture:		Amateur Built:	No
Airworthiness Certificate:	Normal	Serial Number:	421B0446
Landing Gear Type:	Retractable - Tricycle	Seats:	2
Date/Type of Last Inspection:	11/02/1998, Annual	Certified Max Gross Wt.:	7450 lbs
Time Since Last Inspection:	12 Hours	Engines:	2 Reciprocating
Airframe Total Time:	2342 Hours	Engine Manufacturer:	Continental
ELT:	Installed, activated, did not aid in locating accident	Engine Model/Series:	GTSIO-520-H
Registered Owner:	JOHN E. HOESLY	Rated Power:	375 hp
Operator:	JOHN E. HOESLY	Operating Certificate(s) Held:	None

Meteorological Information and Flight Plan

Conditions at Accident Site:	Visual Conditions	Condition of Light:	Night/Dark
Observation Facility, Elevation:	OTH, 17 ft msl	Distance from Accident Site:	0 Nautical Miles
Observation Time:	2150 PST	Direction from Accident Site:	0°
Lowest Cloud Condition:	Unknown / 0 ft agl	Visibility	9 Miles
Lowest Ceiling:	Overcast / 1500 ft agl	Visibility (RVR):	0 ft
Wind Speed/Gusts:	6 knots /	Turbulence Type Forecast/Actual:	/
Wind Direction:	140°	Turbulence Severity Forecast/Actual:	/
Altimeter Setting:	29 inches Hg	Temperature/Dew Point:	4° C / 2° C
Precipitation and Obscuration:			
Departure Point:		Type of Flight Plan Filed:	IFR
Destination:	AURORA, OR (UAO)	Type of Clearance:	IFR
Departure Time:	2145 PST	Type of Airspace:	Class E

Airport Information

Airport:	NORTH BEND MUNI (OTH)	Runway Surface Type:	Asphalt
Airport Elevation:	17 ft	Runway Surface Condition:	Wet
Runway Used:	13	IFR Approach:	None
Runway Length/Width:	5046 ft / 150 ft	VFR Approach/Landing:	None

Wreckage and Impact Information

Crew Injuries:	1 Fatal	Aircraft Damage:	Substantial
Passenger Injuries:	1 Fatal	Aircraft Fire:	None
Ground Injuries:	N/A	Aircraft Explosion:	None
Total Injuries:	2 Fatal	Latitude, Longitude:	

Administrative Information

Investigator In Charge (IIC):	DEBRA J ECKROTE	Report Date:	03/31/2000
Additional Participating Persons:	CARROLL HEBERT; HILLSBORO, OR SCOTT BOYLE; ARVADA, CO TOM MOODY; WICHITA, KS		
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.nts.gov/pubdms/ .		

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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](#).