National Transportation Safety Board
Aviation Accident Final Report

Location:	Fort Worth, Texas	**Accident Number:**	CEN12FA606
Date & Time:	September 5, 2012, 09:49 Local	**Registration:**	N69924
Aircraft:	Cessna 421B	**Aircraft Damage:**	Substantial
Defining Event:	Loss of control in flight	**Injuries:**	2 Serious
Flight Conducted Under:	Part 91: General aviation		

Analysis

The commercial pilot was distracted by the nose cargo door popping open during takeoff; the airplane stalled and collided with trees off the end of the runway. The pilot said there were no mechanical problems with the airplane or engines and that he was fixated on the cargo door and lost control of the airplane. He also said that due to stress, he was not mentally prepared to handle the emergency situation.

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 airplane control on takeoff, which resulted in an inadvertent stall. Contributing to the accident were the unlatched nose cargo door, the pilot's diverted attention, and the pilot's mental ability to handle the emergency situation.

Findings

Personnel issues	Aircraft control - Pilot
Personnel issues	Stress - Pilot
Aircraft	Cargo compartments - Malfunction
Personnel issues	Attention - Pilot

Factual Information

HISTORY OF FLIGHT

On September 5, 2012, at 0949 central daylight time, N69924, a Cessna 421B twin engine airplane, sustained substantial damage after colliding with trees shortly after takeoff from Fort Worth Spinks Airport (FWS), Fort Worth, Texas. The airline transport rated pilot and the passenger were seriously injured. A visual flight rules flight plan was filed for the flight that was destined for Stinson Municipal Airport (SSF), San Antonio, Texas. Visual meteorological conditions prevailed for the flight conducted under 14 Code of Federal Regulations Part 91.

There were several witnesses to the accident. One witness was an air traffic controller, who had cleared the airplane for takeoff on Runway 17R. He said that as the airplane passed by the control tower on the takeoff roll, both engines sounded normal and were in sync. The airplane rotated near taxiway foxtrot and began a "low and slow" climb. When the airplane was approximately 200 feet high, the pilot announced that a door had popped open and he needed to return to land. The controller approved the request. He then saw the airplane make a right turn followed by a left turn and then collide with trees in a left "side slip." He said it was approximately two seconds from the time the pilot reported the open door to the time the accident occurred.

Two Federal Aviation Administration (FAA) maintenance technicians were working near the departure end of Runway 17R when they first saw the airplane. According to one of the technicians, he said the airplane was approximately 150 feet away from him as it passed by from his right to left. He said the airplane was low and slow and not climbing as expected. The airplane cleared the airport perimeter fence by approximately 30-50 feet. The technician said the airplane then began to “fish tail” and was about to stall. He said the airplane’s left wing dipped down followed by the right wing, then back to the left. The airplane then collided with the trees in a left yaw and caught on fire. The technician said the engines were operating and were in sync, but he could not specifically recall if the engines were operating at full power due to the prevailing wind which may have reduced the decibel level of the engine noise. The technician did not remember seeing any doors open on the airplane.

The pilot said that he performed a preflight inspection of the airplane and remembered "banging" on the nose cargo door. He said the door was latched, but not locked. After the inspection, he and the passenger got on board the airplane. The pilot sat in the front left seat, and the passenger sat directly behind the pilot in the aft facing seat. The pilot said that he started the engines; taxied to the runway, performed an engine run-up, and then departed. He said he performed a reduced power (approximately 80 percent) takeoff, which resulted in a longer than normal takeoff roll. The pilot said that as soon as he rotated the airplane at “blue line” and began to climb, the nose cargo door popped completely open. The door appeared like it was going to come off the hinges and into the cockpit. The pilot said he then turned around and told the passenger that the cargo door had popped up and they had to return and land. Then he called air traffic control. Within seconds, the pilot felt the airplane shudder as if it was about to stall, so he immediately lowered the nose. The airplane collided with trees; then hit the ground hard, flipped over, and caught on fire. The pilot was able to open the main door and

both he and the passenger exited to safety.

The pilot said there were no mechanical problems with the airplane and that he was fixated on the unlatched nose cargo door and lost control of the airplane. He said he was dealing with a lot of stress in his personal life and was not prepared to handle the emergency situation.

The passenger said that when the airplane began to climb, it seemed slower than normal. At that point, the pilot turned around and told him a cargo door had opened and they needed to go back and land. The passenger had to turn around in his seat to hear what the pilot was saying, and when he looked forward, he realized that they were going to crash. He did not see the nose cargo door. The passenger said the airplane “dipped” before it made a descending left-hand turn toward the ground. He said he immediately turned around and tightened up his seatbelt before the airplane hit the ground hard and flipped over.

PERSONNEL INFORMATION

The pilot held an airline transport pilot rating for airplane multi-engine land along with a commercial certificate for airplane single-engine land. He also held an airframe and power plant mechanic certificate. The pilot’s last FAA First Class medical was issued on December 9, 2011, with a restriction for glasses. He reported a total of 3,800 hours of which 897 hours were in the same make and model as the accident airplane.

WRECKAGE AND IMPACT INFORMATION

The airplane came to rest in clearing surrounded by small trees and brush on a heading of 240 degrees. The wreckage was inverted and mostly consumed by postimpact fire.

The initial impact point was a stand of 20-30 foot tall trees. Numerous cut branches were strewn around the wreckage path that exhibited flat, angular cuts. The entire airplane was accounted for at the accident site. The initial impact point from where the airplane struck the trees to where the wreckage came to rest was approximately 150-200 feet.

Examination of the airplane revealed the flaps were in the fully retracted position and the landing gear was in the down and locked position. The elevator trim was neutral and the aileron trim was pulled beyond it's stop from impact forces. Flight control continuity was established for all flight control surfaces to the cockpit. The left aileron cable was broken and one of the fractured ends exhibited broom straw signatures. The other end was melted into a melted section of the wing. The aileron sector was thermally damaged.

Examination of both engines revealed no mechanical deficiencies that would have precluded normal operation at the time of the accident.

METEOROLGICAL INFORMATION

Weather at FWS at 0952 was reported as wind from 210 degrees at 4 knots, visibility 10 miles, clear skies, temperature 30 degrees Celsius, dew point 19 degrees Celsius, and a barometric pressure setting of 29.92 inches of Hg.

History of Flight

Takeoff	Aerodynamic stall/spin
Takeoff	Loss of control in flight (Defining event)

Pilot Information

Certificate:	Airline transport; Commercial	**Age:**	46,Male
Airplane Rating(s):	Single-engine land; Multi-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:**	No
Medical Certification:	Class 1 Without waivers/limitations	**Last FAA Medical Exam:**	December 9, 2011
Occupational Pilot:	No	**Last Flight Review or Equivalent:**	
Flight Time:	3800 hours (Total, all aircraft), 897 hours (Total, this make and model), 3718 hours (Pilot In Command, all aircraft), 31 hours (Last 90 days, all aircraft)		

Aircraft and Owner/Operator Information

Aircraft Make:	Cessna	**Registration:**	N69924
Model/Series:	421B	**Aircraft Category:**	Airplane
Year of Manufacture:		**Amateur Built:**	
Airworthiness Certificate:	Normal	**Serial Number:**	421B0553
Landing Gear Type:	Tricycle	**Seats:**	8
Date/Type of Last Inspection:	January 9, 2012 Annual	**Certified Max Gross Wt.:**	7579 lbs
Time Since Last Inspection:		**Engines:**	2 Reciprocating
Airframe Total Time:	10056.8 Hrs as of last inspection	**Engine Manufacturer:**	CONT MOTOR
ELT:	Installed, activated, did not aid in locating accident	**Engine Model/Series:**	GTSIO-520-C
Registered Owner:		**Rated Power:**	340 Horsepower
Operator:		**Operating Certificate(s) Held:**	None

Meteorological Information and Flight Plan

Conditions at Accident Site:	Visual (VMC)	**Condition of Light:**	Day
Observation Facility, Elevation:	FWS,700 ft msl	**Distance from Accident Site:**	
Observation Time:	09:42 Local	**Direction from Accident Site:**	
Lowest Cloud Condition:	Clear	**Visibility**	10 miles
Lowest Ceiling:		**Visibility (RVR):**	
Wind Speed/Gusts:	4 knots /	**Turbulence Type Forecast/Actual:**	/
Wind Direction:	210°	**Turbulence Severity Forecast/Actual:**	/
Altimeter Setting:	29.92 inches Hg	**Temperature/Dew Point:**	30°C / 19°C
Precipitation and Obscuration:			
Departure Point:	Fort Worth, TX (FWS)	**Type of Flight Plan Filed:**	VFR
Destination:	San Antonio, TX (SSF)	**Type of Clearance:**	VFR
Departure Time:	09:49 Local	**Type of Airspace:**	

Airport Information

Airport:	Fort Worth Spinks Airport FWS	**Runway Surface Type:**	Asphalt
Airport Elevation:	700 ft msl	**Runway Surface Condition:**	Dry
Runway Used:	17R	**IFR Approach:**	None
Runway Length/Width:	6002 ft / 100 ft	**VFR Approach/Landing:**	None

Wreckage and Impact Information

Crew Injuries:	1 Serious	**Aircraft Damage:**	Substantial
Passenger Injuries:	1 Serious	**Aircraft Fire:**	On-ground
Ground Injuries:	N/A	**Aircraft Explosion:**	
Total Injuries:	2 Serious	**Latitude, Longitude:**	32.558887,-97.304725(est)

Administrative Information

Investigator In Charge (IIC):	Yeager, Leah
Additional Participating Persons:	James Minter; FAA/FSDO; Fort Worth, TX Nicole Charnon; Continental Motors, Inc; Mobile, AL Henry Soderlund; Cessna Aircraft Company; Wichita, KS
Original Publish Date:	June 19, 2013
Note:	
Investigation Docket:	https://data.ntsb.gov/Docket?ProjectID=84930