Aviation Investigation Final Report

Location:	Brooklyn, Iowa	**Accident Number:**	CEN13LA500
Date & Time:	August 16, 2013, 17:30 Local	**Registration:**	N2070K
Aircraft:	Cessna 206	**Aircraft Damage:**	Minor
Defining Event:	Miscellaneous/other	**Injuries:**	1 Fatal, 1 None
Flight Conducted Under:	Part 91: General aviation - Positioning		

Analysis

Before departure for the positioning flight, the pilot was told that an observer/passenger would be joining him for the flight. The airplane, which was typically used in skydiving operations, had its right cabin door removed, and a fabric roll-up jump door had been installed; it was not closed during the flight. The pilot reported that the passenger sat behind him on the right side of the airplane and that he heard him attach his seatbelt. During the flight, the passenger moved forward in the cabin, which resulted in the passenger's reserve parachute inadvertently deploying and the passenger being pulled through the open jump door. The passenger hit the doorframe, and the parachute became entangled with the empennage, which resulted in a loss of airplane control and a subsequent aerodynamic stall. The parachute eventually separated from the empennage, and the pilot was able to regain control of the airplane and land it without further incident. A postaccident examination revealed that the passenger had inadvertently attached his seatbelt to the handle that released the reserve parachute. Therefore, the reserve parachute deployed when the passenger moved. The pilot did not conduct a safety briefing before the flight; however, the improper routing of the seatbelt may not have been identified even if he had conducted a safety briefing. Additionally, if the jump door had been closed, it is likely that the passenger would not have been pulled out of the airplane.

Probable Cause and Findings

The National Transportation Safety Board determines the probable cause(s) of this accident to be:

The improper routing of the seatbelt, which resulted in the inadvertent deployment of the reserve parachute, and the open jump door, which allowed the passenger to be pulled from the airplane.

Findings

Personnel issues	Use of equip/system - Passenger
Aircraft	Passenger compartment equip - Incorrect use/operation
Personnel issues	Use of equip/system - Pilot

Factual Information

History of Flight

Enroute-climb to cruise	Miscellaneous/other (Defining event)
Enroute-climb to cruise	Aerodynamic stall/spin
Uncontrolled descent	Attempted remediation/recovery
Landing	Miscellaneous/other

On August 16, 2013, about 1730 central daylight time, a Cessna 206 airplane, N2070K, was damaged inflight near Brooklyn, Iowa. The commercial pilot was not injured; however, the passenger was fatally injured. The airplane was registered to Brooklyn Air Inc., and operated by Skydive Iowa Inc., under the provisions of 14 Code of Federal Regulations Part 91 as positioning flight. Visual meteorological conditions prevailed for the flight, which operated without a flight plan. The flight originated from Skydive Iowa Airport (09IA), Brooklyn, Iowa, and was en route to Grinnell Regional Airport (KGGI), Grinnell, Iowa.

According to the pilot, the purpose of the flight was to position the airplane to Grinnell, Iowa, so that maintenance could be conducted. After starting the airplane engine and preparing to taxi, the pilot was notified by the company tandem master that a passenger would be joining him for the flight to Grinnell as an observer. Both the pilot and passenger were wearing parachutes, as required by the company policy. The airplane was used in skydive operations and the right-side, cabin door had been removed.

The pilot reported that the passenger boarded the airplane, took a seat on the right side of the airplane, behind the pilot, and fastened his seatbelt. He stated that he did not inspect the seatbelt and had heard the "click" of the seatbelt as it was latched. No passenger briefing was provided by the pilot. Shortly after departure, the passenger elected to move from his position behind the pilot to a position in the front of the airplane, beside the pilot. As the passenger was moving, the reserve parachute, in the passenger's parachute-pack, deployed and the passenger was pulled from the airplane.

The pilot stated that as the passenger exited the airplane, he heard a loud "bang". At the same time, the parachute became entangled in the empennage. The airplane pitched up approximately 50 degrees, banked 80 degrees to the right, and stalled. Eventually, the parachute separated from the empennage and the pilot was able to recover the airplane between 600 and 700 feet above ground level (agl). The pilot observed the parachute open, and about 100 feet agl, the parachute made a sharp right turn. The pilot assumed that the passenger was controlling the parachute.

According to one witness on the ground, he observed the canopy of the parachute circle several times before the parachute seemed to go straight down. Another witness commented that the parachute was very low and very fast. A witness responded to the location where the parachute came down and found the passenger unconscious and without a pulse. According to the Iowa Department of Public Health, who conducted the autopsy, the passenger died from multiple blunt force injuries.

The pilot continued to KGGI and landed without further incident. A post-accident examination of the airplane revealed minor damage to the fuselage at the door frame and skin damage to the horizontal stabilizer. Blood was found on the door frame of the airplane where the passenger egressed. Further examination revealed that the "D" ring, or handle that released the reserve parachute, was buckled into the seatbelt.

A review of the airplane operating limitations, "Limitations for the Operation of an Aircraft with a Door Removed" – stated that "when operations other than intentional parachute jumping and skydiving are conducted, a suitable guardrail or equivalent safety device must be provided for the doorway."

The pilot reported that a "roll-up door" was installed on the airplane but was not in use at the time of the accident flight because of the warm temperatures and because one of the devices used to fasten the corner of the door to the airframe was broken, preventing them from properly securing the door.

Despite multiple attempts, the pilot refused to provide the required Pilot Operator Aircraft Accident/Incident Report, National Transportation Safety Board Form 6120.1/2.

Pilot Information

Certificate:	Commercial	**Age:**	27
Airplane Rating(s):	Single-engine land; Multi-engine land	**Seat Occupied:**	Left
Other Aircraft Rating(s):	None	**Restraint Used:**	3-point
Instrument Rating(s):	Airplane	**Second Pilot Present:**	No
Instructor Rating(s):	None	**Toxicology Performed:**	No
Medical Certification:	Class 2 With waivers/limitations	**Last FAA Medical Exam:**	February 25, 2013
Occupational Pilot:	Yes	**Last Flight Review or Equivalent:**	
Flight Time:	320 hours (Total, all aircraft), 1 hours (Total, this make and model)		

Aircraft and Owner/Operator Information

Aircraft Make:	Cessna	**Registration:**	N2070K
Model/Series:	206	**Aircraft Category:**	Airplane
Year of Manufacture:	1964	**Amateur Built:**	
Airworthiness Certificate:	Normal	**Serial Number:**	206-0196
Landing Gear Type:	Tricycle	**Seats:**	
Date/Type of Last Inspection:	August 1, 2013 Annual	**Certified Max Gross Wt.:**	
Time Since Last Inspection:		**Engines:**	1 Reciprocating
Airframe Total Time:		**Engine Manufacturer:**	CONT MOTOR
ELT:		**Engine Model/Series:**	IO-520
Registered Owner:	Brooklyn Air Inc.	**Rated Power:**	285 Horsepower
Operator:	Sky Dive Iowa Inc	**Operating Certificate(s) Held:**	None

Meteorological Information and Flight Plan

Conditions at Accident Site:	Visual (VMC)	**Condition of Light:**	Day
Observation Facility, Elevation:	KGGI,1008 ft msl	**Distance from Accident Site:**	15 Nautical Miles
Observation Time:	17:35 Local	**Direction from Accident Site:**	270°
Lowest Cloud Condition:	8000 ft AGL	**Visibility**	10 miles
Lowest Ceiling:	Broken / 8000 ft AGL	**Visibility (RVR):**	
Wind Speed/Gusts:	3 knots / None	**Turbulence Type Forecast/Actual:**	/ None
Wind Direction:	130°	**Turbulence Severity Forecast/Actual:**	/ N/A
Altimeter Setting:	30.18 inches Hg	**Temperature/Dew Point:**	25°C / 10°C
Precipitation and Obscuration:	No Obscuration; No Precipitation		
Departure Point:	Brooklyn, IA (09IA)	**Type of Flight Plan Filed:**	None
Destination:	Grinnell, IA (KGGI)	**Type of Clearance:**	None
Departure Time:	17:15 Local	**Type of Airspace:**	Unknown

Wreckage and Impact Information

Crew Injuries:	1 None	**Aircraft Damage:**	Minor
Passenger Injuries:	1 Fatal	**Aircraft Fire:**	None
Ground Injuries:	N/A	**Aircraft Explosion:**	None
Total Injuries:	1 Fatal, 1 None	**Latitude, Longitude:**	41.745555,-92.409164(est)

Administrative Information

Investigator In Charge (IIC):	Rodi, Jennifer
Additional Participating Persons:	Harrison McNaughton; FAA Flight Standards District Office; IA
Original Publish Date:	August 7, 2014
Last Revision Date:	
Investigation Class:	Class
Note:	
Investigation Docket:	https://data.ntsb.gov/Docket?ProjectID=87837