



National Transportation Safety Board Aviation Accident Preliminary Report

Location:	Miami, FL	Accident Number:	ERA18FA194A
Date & Time:	07/17/2018, 1259 EDT	Registration:	N16281
Aircraft:	Piper PA34	Injuries:	2 Fatal
Flight Conducted Under:	Part 91: General Aviation - Instructional		

On July 17, 2018, at 1259 eastern daylight time, a Piper PA-34-200, N16281, and a Cessna 172N, N6428D collided in midair about 9 miles northwest of Miami Executive Airport (TMB), Miami, Florida. The Piper was destroyed and the private pilot and designated pilot examiner (DPE) were fatally injured. The Cessna was destroyed and the flight instructor and student pilot were fatally injured. Both airplanes were registered to and operated by Dean International Inc. The Piper flight was an evaluation flight for a commercial pilot certificate and the Cessna flight was an instructional flight. Both flights were conducted under the provisions of Title 14 *Code of Federal Regulations* Part 91. Visual meteorological conditions prevailed and no flight plans were filed for the local flights. The Piper departed TMB about 1250 and the Cessna departed TMB about 1200.

According to preliminary information from the Federal Aviation Administration, the Piper was en route to a nearby training area at an altitude about 1,500 feet mean sea level (msl) and no longer communicating with TMB tower as it was outside the Class D airspace. The Cessna was returning from the training area at an altitude about 1,500 feet msl and had contacted the TMB tower just prior to collision. The controller acknowledged the transmission and issued a traffic advisory, but no further communications were received from the Cessna. Review of radar data revealed the two targets converged nearly straight on. At the time of the collision, the Piper was flying northwest and the Cessna was flying southeast.

The Piper main wreckage was located about 620 feet west of the collision point indicated by radar data. The wreckage was mostly intact and upright, with the vertical stabilizer and outboard section of right wing separated. The vertical stabilizer was located about 50 feet west of the main wreckage and the outboard section of right wing was located by aerial drone about 220 feet north-northeast of the main wreckage. Both engines remained attached to the airframe and the propellers remained attached to their respective engine. The right engine propeller was in a feather position and the corresponding cockpit controls for both engines were in the aft position, consistent with impact damage. One right propeller blade exhibited little damage and the other right propeller blade was bent forward. One left engine propeller blade exhibited little damage and the other was bent aft. The landing gear selector handle was in the down position and the landing gear was found mid-extension. The flaps were in the

retracted position. Flight control continuity was confirmed and measurement of the stabilator trim jackscrew corresponded to a nose-up trim setting midrange between neutral and full nose up. Measurement of the rudder trim shaft corresponded to an approximate neutral rudder trim. The two front seats were equipped with lapbelts and should harnesses. The right seat restraint was unlatched by rescue personnel and the left seat restraint was cut by rescue personnel.

The Cessna main wreckage was located about 1,340 feet southeast of the collision point indicated by radar data. The wreckage came to rest upright and its left wing had separated. The left wing was located by areal drone about 1,320 feet northwest of the main wreckage. The engine remained attached to the airframe and the propeller remained attached to the engine. One propeller blade exhibited little damage and the other blade was bent aft and exhibited chordwise scratches. The flaps were found in the retracted position and flight control continuity was confirmed. Measurement of the elevator trim jackscrew corresponded to an approximate 5° trim tab up (nose-down) position. The two front seats were equipped with lapbelts and should harnesses. The right seat restraint was not recovered and the left seat restraint was separated consistent with overload.

During the wreckage examinations, red and blue paint transfer was found on a top inboard section of Cessna right wing. Cessna tire marks were found on the Piper right wingtip and the left main landing gear tire of the Cessna was not recovered. Additionally, the right upper strut attach fitting from the Cessna was found in the Piper tailcone. The Cessna left front wing spar carry-through fitting (near left wing root) was found in the outboard right wing of the Piper. In addition, a section of Cessna right wing spar fragment was found in the Piper vertical stabilizer.

The Piper was a six-seat, low-wing, retractable tricycle gear airplane, manufactured in 1973. It was powered by two counter-rotating Lycoming IO-360, 200-horsepower engines, both equipped with two-blade Hartzell constant-speed propellers. Review of maintenance records revealed that the Piper's most recent annual inspection was completed on June 19, 2018. At that time, the airframe had accumulated approximately 10,153 total hours of operation. The left engine had accumulated about 10,207 total hours of operation; of which, 1,147 hours were since major overhaul. The right engine had accumulated about 11,401 total hours of operation; of which, 1,147 hours were since major overhaul.

The Cessna was a four-seat, high-wing, fixed tricycle gear airplane, manufactured in 1979. It was powered by a Lycoming O-320, 160-horsepower engine, equipped with a two-blade McCauley fixed-pitch propeller. Review of maintenance records revealed that the Cessna's most 100-hour inspection was completed on June 13, 2018. At that time, the airframe had accumulated approximately 18,447 total hours of operation. The engine had accumulated about 13,256 total hours of operation; of which, 2,541 hours were since major overhaul.

The pilot of the Piper held a private pilot certificate with ratings for airplane single-engine land and instrument airplane. Her most recent first-class medical certificate was issued on September 29, 2017. According to her application for a commercial pilot certificate, dated July 17, 2018, she reported a total flight experience of 253 hours. The DPE held an airline transport pilot certificate with ratings for airplane single-engine land, airplane single-engine sea, airplane multiengine land, and airplane multiengine sea. He also held a commercial pilot

certificate with a rating for glider. Additionally, he held a flight instructor certificate with ratings for airplane single-engine, airplane multiengine, and instrument airplane. His most recent second-class medical certificate was issued on August 26, 2017. At that time, he reported a total flight experience of 26,000 hours.

The pilot of the Cessna held a commercial pilot certificate with ratings for airplane single-engine land and instrument airplane. He also held a flight instructor certificate with a rating for airplane single-engine. His most recent first-class medical certificate was issued on December 15, 2014. According to his application for a flight instructor certificate, dated March 18, 2018, he reported a total flight experience of 311 hours. The student pilot's most recent first-class medical certificate was issued on March 20, 2018. According to the student pilot's logbook, he had a total flight experience of 52 hours.

The recorded weather at TMB, at 1253, was: wind from 120° at 5 knots, visibility 10 statute miles, scattered clouds at 3,500 feet and 4,200 feet, temperature 32° C, dew point 24° C, altimeter 30.10 inches of mercury.

Aircraft and Owner/Operator Information

Aircraft Make:	Piper	Registration:	N16281
Model/Series:	PA34 200	Aircraft Category:	Airplane
Amateur Built:	No		
Operator:	Dean International Inc	Operating Certificate(s) Held:	Pilot School (141)

Meteorological Information and Flight Plan

Conditions at Accident Site:	Visual Conditions	Condition of Light:	Day
Observation Facility, Elevation:	TMB, 10 ft msl	Observation Time:	1253 EDT
Distance from Accident Site:	9 Nautical Miles	Temperature/Dew Point:	32° C / 24° C
Lowest Cloud Condition:	Scattered / 3500 ft agl	Wind Speed/Gusts, Direction:	5 knots / , 120°
Lowest Ceiling:	None	Visibility:	10 Miles
Altimeter Setting:	30.1 inches Hg	Type of Flight Plan Filed:	None
Departure Point:	Miami, FL (TMB)	Destination:	Miami, FL (TMB)

Wreckage and Impact Information

Crew Injuries:	2 Fatal	Aircraft Damage:	Destroyed
Passenger Injuries:	N/A	Aircraft Fire:	None
Ground Injuries:	N/A	Aircraft Explosion:	None
Total Injuries:	2 Fatal	Latitude, Longitude:	25.757778, -80.556944 (est)

Administrative Information

Investigator In Charge (IIC):	Robert J Gretz
Additional Participating Persons:	Tony Saavedra; FAA/FSDO; Miramar, FL Jonathon Hirsch; Piper Aircraft; Vero Beach, FL Ricardo Asensio; Textron; Wichita, KS
Note:	The NTSB traveled to the scene of this accident.