



National Transportation Safety Board Aviation Accident Factual Report

Location:	Louisville, KY	Accident Number:	ERA13LA279
Date & Time:	06/11/2013, 2230 EDT	Registration:	N118JD
Aircraft:	CESSNA 172M	Aircraft Damage:	Substantial
Defining Event:	Loss of control in flight	Injuries:	4 Serious
Flight Conducted Under:	Part 91: General Aviation - Personal		

HISTORY OF FLIGHT

On June 11, 2013, about 2230 eastern daylight time, a Cessna 172M, N118JD, operated by a private individual, was substantially damaged when it impacted terrain during takeoff from Bowman Field (LOU), Louisville, Kentucky. The private pilot and three passengers were seriously injured. Visual meteorological conditions prevailed, and no flight plan was filed for the local flight. The personal flight was conducted under the provisions of Title 14 Code of Federal Regulations Part 91.

The pilot was unable to recall any information about the accident; however he did report that the altitude of the occurrence was about "200 feet [above ground level]." Review of radar data provided by the Federal Aviation Administration (FAA) revealed the airplane was performing takeoff and landings to runway 33 at LOU. The airplane impacted the ground about 430 feet from the departure end of the runway in a right wing low, nose down attitude.

PERSONNEL INFORMATION

According to FAA records, the pilot, age 17, held a private pilot certificate for airplane single-engine land. The certificate was issued on February 17, 2013. His most recent FAA third-class airman medical certificate was issued on October 30, 2012. According to the pilot's logbook, as of May 19, 2013, the pilot had accumulated 58.2 total hours of flight experience; of which, all of those hours were in the same make and model as the accident airplane. The pilot had accumulated 9.6 hours total night time experience, of which 1.4 hours of night time experience were within the 90 days preceding the accident, including four night takeoff and landings.

AIRCRAFT INFORMATION

The four-seat, high-wing, fixed tricycle-gear airplane, was manufactured in 1975. It was powered by a Lycoming O-320-E2D, 150-hp engine. Review of the airplane's maintenance records revealed that its most recent annual inspection was completed on March 1, 2013. At the

time of inspection, the airplane had accumulated 8,173.5 total hours in service. The engine had accumulated approximately 1,145 total hours of time in service since major overhaul. The most recent 100-hour inspection was completed on May 14, 2013, and had 8,322.77 total hours in service.

METEOROLOGICAL INFORMATION

The 2253 recorded weather at LOU, included wind from 160 degrees at 3 knots, 10 miles visibility, clear skies, temperature 26 degrees C, dew point 19 degrees C, and a barometric altimeter setting of 29.95 inches of mercury.

According to the U.S. Naval Observatory, on the day of the accident, official sunset was at 2106, the end of civil twilight was at 2138, and official moonset was at 2311. The moon phase was waxing crescent with 8 percent of the moon's visible disk would have been illuminated.

AIRPORT INFORMATION

The airport was a publically owned airport and at the time of the accident had an operating control tower that operated between the hours of 0700 and 2200. The airport was equipped with two runways designated as 6/24 and 15/33. The runways were reported as "in fair condition" or "in good condition" at the time of the accident. Runway 6/24 was a 4,326 -foot-long by 75-foot-wide runway and runway 15/33 was a 3,579-foot-long by 75-foot-wide runway. The airport was 546 feet above mean sea level. Both runways were equipped with medium intensity runway lights (MIRL) that were pilot activated over the common traffic advisory frequency. The lights were tested following the accident and stayed on for 15 minutes when activated.

WRECKAGE AND IMPACT INFORMATION

According to photographs provided by an FAA inspector, after impact the airplane pivoted around the nose before coming to rest upright, nose down, on a golf course. Both propeller blades exhibited chordwise scratching and the wings and fuselage sustained substantial damage.

Postaccident examination by an FAA inspector and a representative of the airplane's manufacturer revealed that the flap actuator jackscrew measured about 4 inches, which correlated to a 30 degree flap position. Postaccident examination of the airplane and engine did not reveal any malfunctions or failures that would have precluded normal operation.

ADDITIONAL INFORMATION

The pilot reported to an FAA inspector that he did a weight and balance prior to accident flight. When asked if he still had a copy of it, he said he "did it in his head." Calculation of the airplane's weight and balance information revealed that the airplane's total weight was 2414

pounds; the maximum allowable takeoff weight was 2300 pounds.

Pilot's Handbook of Aeronautical Knowledge (FAA-H-8083-25A)

Chapter 8, "Weight and Balance," states in part "Compliance with the weight and balance limits of any airplane is critical to flight safety. Operating an airplane above the maximum weight limitation compromises the structural integrity of the airplane and adversely affects its performance...an overloaded airplane may not be able to leave the ground, or if it does become airborne, it may exhibit unexpected and unusually poor flight characteristics...excessive weight reduces the flight performance of an airplane in almost every respect. The most important performance deficiencies of the overloaded airplane are...higher stalling speed."

Cessna 172M Pilot Operating Handbook

Section 2, "Takeoff" states in part "Wing Flap Settings – Normal and obstacle clearance takeoffs are performed with wing flaps up... Flap settings greater than 10 degrees are not recommended at any time for takeoff..." Also, a review of the "normal take-off" and "maximum performance take-off" stated in part that, the wing flaps setting is zero degrees.

Pilot Information

Certificate:	Private	Age:	17
Airplane Rating(s):	Single-engine Land	Seat Occupied:	Left
Other Aircraft Rating(s):	None	Restraint Used:	Seatbelt, Shoulder harness
Instrument Rating(s):	None	Second Pilot Present:	No
Instructor Rating(s):	None	Toxicology Performed:	No
Medical Certification:	Class 3 Without Waivers/Limitations	Last FAA Medical Exam:	10/30/2012
Occupational Pilot:	No	Last Flight Review or Equivalent:	02/17/2013
Flight Time:	58.2 hours (Total, all aircraft), 58.2 hours (Total, this make and model), 22.3 hours (Pilot In Command, all aircraft), 5.6 hours (Last 90 days, all aircraft), 1.4 hours (Last 30 days, all aircraft)		

Aircraft and Owner/Operator Information

Aircraft Make:	CESSNA	Registration:	N118JD
Model/Series:	172M	Aircraft Category:	Airplane
Year of Manufacture:		Amateur Built:	No
Airworthiness Certificate:	Normal	Serial Number:	17265574
Landing Gear Type:	Tricycle	Seats:	4
Date/Type of Last Inspection:	05/14/2013, Annual	Certified Max Gross Wt.:	2300 lbs
Time Since Last Inspection:		Engines:	1 Reciprocating
Airframe Total Time:	8322 Hours as of last inspection	Engine Manufacturer:	LYCOMING
ELT:	C91 installed, activated, did not aid in locating accident	Engine Model/Series:	O-320
Registered Owner:	CARDINAL WINGS AVIATION LLC	Rated Power:	150 hp
Operator:	On file	Operating Certificate(s) Held:	None

Meteorological Information and Flight Plan

Conditions at Accident Site:	Visual Conditions	Condition of Light:	Night
Observation Facility, Elevation:	LOU, 546 ft msl	Distance from Accident Site:	1 Nautical Miles
Observation Time:	2253 EDT	Direction from Accident Site:	140°
Lowest Cloud Condition:	Clear	Visibility	10 Miles
Lowest Ceiling:	None	Visibility (RVR):	
Wind Speed/Gusts:	3 knots /	Turbulence Type Forecast/Actual:	/ None
Wind Direction:	160°	Turbulence Severity Forecast/Actual:	/
Altimeter Setting:	29.95 inches Hg	Temperature/Dew Point:	26° C / 19° C
Precipitation and Obscuration:	No Obscuration; No Precipitation		
Departure Point:	Louisville, KY (LOU)	Type of Flight Plan Filed:	None
Destination:	Louisville, KY (LOU)	Type of Clearance:	None
Departure Time:	2230 EDT	Type of Airspace:	Class C

Airport Information

Airport:	Bowman Field (LOU)	Runway Surface Type:	Asphalt
Airport Elevation:	546 ft	Runway Surface Condition:	Dry
Runway Used:	33	IFR Approach:	None
Runway Length/Width:	3579 ft / 75 ft	VFR Approach/Landing:	Touch and Go; Traffic Pattern

Wreckage and Impact Information

Crew Injuries:	1 Serious	Aircraft Damage:	Substantial
Passenger Injuries:	3 Serious	Aircraft Fire:	None
Ground Injuries:	N/A	Aircraft Explosion:	None
Total Injuries:	4 Serious	Latitude, Longitude:	38.232500, -85.669444 (est)

Administrative Information

Investigator In Charge (IIC):	John J Neylon
Additional Participating Persons:	Shannon Bengueyfield; FAA/FSDO; Louisville, KY Steve Miller; Cessna Aircraft; Wichita, KS James M Childers; Lycoming Engines; Williamsport, PA
Note:	The NTSB did not travel to the scene of this accident.
Investigation Docket:	http://dms.nts.gov/pubdms/search/dockList.cfm?mKey=87162