



Aviation Investigation Final Report

Location:	South Beloit, Illinois	Accident Number:	CEN18LA328
Date & Time:	August 12, 2018, 08:32 Local	Registration:	N9894K
Aircraft:	Piper PA32R	Aircraft Damage:	Substantial
Defining Event:	Loss of control in flight	Injuries:	1 Serious, 2 Minor
Flight Conducted Under:	Part 91: General aviation - Personal		

Analysis

The private pilot indicated that soon after takeoff for the personal flight, the airplane's engine cowling opened and began to swing back and forth. Concerned the cowling might fracture the windshield, he reduced engine power to land straight ahead, but, after realizing that the runway remaining was insufficient to do so, he attempted to climb and return to the runway. During his attempted go-around, the airplane began to descend and then impacted a cornfield off the end of the runway. Examination of the airframe and engine revealed no evidence of mechanical malfunctions or failures that would have precluded normal flight operations. The pilot stated that he was very startled by the opening of the cowling, which distracted him from maintaining airspeed.

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 airspeed after being startled and distracted when the engine cowling opened during takeoff, which led to a subsequent impact with terrain.

Findings

Personnel issues	Aircraft control - Pilot
Personnel issues	Attention - Pilot

Factual Information

History of Flight

Initial climb	Part(s) separation from AC
Initial climb	Loss of control in flight (Defining event)
Emergency descent	Collision with terr/obj (non-CFIT)

On August 12, 2018, about 0832 central daylight time, a Piper PA32R airplane, N9894K, impacted terrain near South Beloit, Illinois after departing from Beloit Airport (44C), Beloit, Wisconsin. The pilot and one passenger suffered minor injuries, one passenger suffered serious injuries, and the airplane was substantially damaged. The airplane was registered to DBG Aviation Inc. and operated by the pilot under the provisions of Title 14 *Code of Federal Regulations* Part 91 as a personal flight. Day visual meteorological conditions prevailed for the flight, which was destined for Baraboo–Wisconsin Dells Airport (DLL), Baraboo, Wisconsin.

After takeoff from runway 25, the pilot stated the engine cowling opened and begin to rapidly swing back and forth. Based on his concern the cowling might fracture the windshield and cause an injury, the pilot reduced power and considered landing straight ahead. Realizing he was too far down the runway to land, the pilot increased power and attempted to climb and return to the runway with a shallow left bank. The airplane developed a sink rate and impacted a cornfield about ½ mile off the end of the runway, damaging the engine mounts and fuselage. Examination of the airframe and engine revealed no evidence of mechanical malfunctions or failures that would have precluded normal flight operations.

The pilot stated that he was very startled by the sudden and unexpected opening of the cowling, which distracted him from maintaining airspeed control. A Federal Aviation Administration Safety Team (FAAST) safety briefing titled "Startle Response", located in the public docket for this investigation, included the following information:

Humans are subject to a "startle response" when they are faced with unexpected emergency situations and may delay action or initiate inappropriate action in response to the emergency. Some examples of unexpected events during flight that could crop up and cause an emergency, or an accident if it is not managed properly, include:

- *Partial/full loss of power on takeoff*
- *Landing gear extension/retraction failure*
- *Bird strike*
- *Cabin door opening*

Train and plan for emergencies. In many cases, pilots don't review and practice how they will handle unexpected events and abnormal or emergency situations, except during flight reviews or other recurrent training.

"Chair Flying" - Unexpected events, especially those occurring close to the ground, require rapid, appropriate action. Your chances of a safe outcome are greatly improved if your response to an unexpected event is planned out ahead of time. Review "what if" scenarios in your head and practice what you would immediately do should a certain event take you by surprise.

Pilot Information

Certificate:	Private	Age:	62, Male
Airplane Rating(s):	Single-engine land; Multi-engine land	Seat Occupied:	Left
Other Aircraft Rating(s):	None	Restraint Used:	Lap only
Instrument Rating(s):	Airplane	Second Pilot Present:	No
Instructor Rating(s):	None	Toxicology Performed:	No
Medical Certification:	Class 3 Without waivers/limitations	Last FAA Medical Exam:	March 21, 2018
Occupational Pilot:	No	Last Flight Review or Equivalent:	April 25, 2018
Flight Time:	1593 hours (Total, all aircraft), 1235 hours (Total, this make and model), 4 hours (Last 90 days, all aircraft), 2 hours (Last 30 days, all aircraft), 0 hours (Last 24 hours, all aircraft)		

Passenger Information

Certificate:		Age:	Female
Airplane Rating(s):		Seat Occupied:	Right
Other Aircraft Rating(s):		Restraint Used:	Lap only
Instrument Rating(s):		Second Pilot Present:	No
Instructor Rating(s):		Toxicology Performed:	No
Medical Certification:		Last FAA Medical Exam:	
Occupational Pilot:	No	Last Flight Review or Equivalent:	
Flight Time:			

Passenger Information

Certificate:		Age:	Female
Airplane Rating(s):		Seat Occupied:	Right
Other Aircraft Rating(s):		Restraint Used:	Lap only
Instrument Rating(s):		Second Pilot Present:	No
Instructor Rating(s):		Toxicology Performed:	No
Medical Certification:		Last FAA Medical Exam:	
Occupational Pilot:	No	Last Flight Review or Equivalent:	
Flight Time:			

Aircraft and Owner/Operator Information

Aircraft Make:	Piper	Registration:	N9894K
Model/Series:	PA32R 300	Aircraft Category:	Airplane
Year of Manufacture:	1978	Amateur Built:	
Airworthiness Certificate:	Normal	Serial Number:	32R-7880041
Landing Gear Type:	Retractable - Tricycle	Seats:	6
Date/Type of Last Inspection:	March 14, 2018 Annual	Certified Max Gross Wt.:	3600 lbs
Time Since Last Inspection:		Engines:	1 Reciprocating
Airframe Total Time:	3414 Hrs at time of accident	Engine Manufacturer:	Lycoming
ELT:	Installed, activated, did not aid in locating accident	Engine Model/Series:	IO-540
Registered Owner:	Dbg Aviation Inc	Rated Power:	300 Horsepower
Operator:	Dbg Aviation Inc	Operating Certificate(s) Held:	None

Meteorological Information and Flight Plan

Conditions at Accident Site:	Visual (VMC)	Condition of Light:	Day
Observation Facility, Elevation:	KJVL,808 ft msl	Distance from Accident Site:	8 Nautical Miles
Observation Time:	08:45 Local	Direction from Accident Site:	344°
Lowest Cloud Condition:	Clear	Visibility	6 miles
Lowest Ceiling:	None	Visibility (RVR):	
Wind Speed/Gusts:	/	Turbulence Type Forecast/Actual:	None / None
Wind Direction:		Turbulence Severity Forecast/Actual:	N/A /
Altimeter Setting:	30.13 inches Hg	Temperature/Dew Point:	24°C / 21°C
Precipitation and Obscuration:	Moderate - None - Mist		
Departure Point:	Beloit, WI (44C)	Type of Flight Plan Filed:	None
Destination:	Baraboo, WI (DLL)	Type of Clearance:	None
Departure Time:	08:31 Local	Type of Airspace:	Class G

Airport Information

Airport:	Beloit 44C	Runway Surface Type:	Asphalt
Airport Elevation:	817 ft msl	Runway Surface Condition:	Dry
Runway Used:	25	IFR Approach:	None
Runway Length/Width:	3300 ft / 50 ft	VFR Approach/Landing:	None

Wreckage and Impact Information

Crew Injuries:	1 Minor	Aircraft Damage:	Substantial
Passenger Injuries:	1 Serious, 1 Minor	Aircraft Fire:	None
Ground Injuries:	N/A	Aircraft Explosion:	None
Total Injuries:	1 Serious, 2 Minor	Latitude, Longitude:	42.492221,-88.983612(est)

Administrative Information

Investigator In Charge (IIC):	Folkerts, Michael
Additional Participating Persons:	Paul Adams; Flight Standards District Office ; Dupage, IL
Original Publish Date:	April 13, 2020
Last Revision Date:	
Investigation Class:	Class
Note:	The NTSB did not travel to the scene of this accident.
Investigation Docket:	https://data.ntsb.gov/Docket?ProjectID=98060

The National Transportation Safety Board (NTSB) is an independent federal agency charged by Congress with investigating every civil aviation accident in the United States and significant events in other modes of transportation—railroad, transit, highway, marine, pipeline, and commercial space. We determine the probable causes of the accidents and events we investigate, and issue safety recommendations aimed at preventing future occurrences. In addition, we conduct transportation safety research studies and offer information and other assistance to family members and survivors for each accident or event we investigate. We also serve as the appellate authority for enforcement actions involving aviation and mariner certificates issued by the Federal Aviation Administration (FAA) and US Coast Guard, and we adjudicate appeals of civil penalty actions taken by the FAA.

The NTSB does not assign fault or blame for an accident or incident; rather, as specified by NTSB regulation, “accident/incident investigations are fact-finding proceedings with no formal issues and no adverse parties ... and are not conducted for the purpose of determining the rights or liabilities of any person” (Title 49 *Code of Federal Regulations* section 831.4). Assignment of fault or legal liability is not relevant to the NTSB’s statutory mission to improve transportation safety by investigating accidents and incidents and issuing safety recommendations. In addition, statutory language prohibits the admission into evidence or use of any part of an NTSB report related to an accident in a civil action for damages resulting from a matter mentioned in the report (Title 49 *United States Code* section 1154(b)). A factual report that may be admissible under 49 *United States Code* section 1154(b) is available [here](#).