



National Transportation Safety Board Aviation Accident Final Report

Location:	Emporia, VA	Accident Number:	ERA17CA216
Date & Time:	06/28/2017, 1245 EDT	Registration:	N2460A
Aircraft:	CESSNA 172	Aircraft Damage:	Substantial
Defining Event:	Abnormal runway contact	Injuries:	1 None
Flight Conducted Under:	Part 91: General Aviation - Instructional		

Analysis

The student pilot reported that the flight was his first solo cross-country, and the arrival and departure at his first airport were uneventful. About 8 miles from the second airport, he listened to the airport's automatic weather observation system, which reported that the wind was coming from 020° at 5 knots. He entered the left traffic pattern for runway 34, and while on the downwind leg abeam the end of the runway, he reduced engine power to idle and lowered the wing flaps to 10°. He then turned onto the left base leg and maintained 70 knots and lowered the wing flaps to 30° on final approach, maintaining an airspeed of "between 50 and 54 knots." At the runway numbers, he began to pull back on the control wheel to initiate the landing flare. The airplane's nose then abruptly pitched up and left, which he believed felt like a wind gust. He tried to correct by releasing back pressure on the control wheel and using rudder and ailerons to move back to the right, but the airplane was still left of the runway centerline. Subsequently, the airplane bounced hard numerous times, the propeller struck the runway, and the airplane then departed the runway to the left. During the runway excursion, the nose landing gear collapsed, and the airplane skidded across a taxiway, eventually stopping in the grass. The fuselage and firewall were substantially damaged.

The student pilot reported that there were no preaccident mechanical malfunctions or failures with the airplane that would have precluded normal operation.

Review of the Pilot's Operating Handbook indicated that the airspeed for a normal landing should have been between 60 and 70 knots with the wing flaps down.

Probable Cause and Findings

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

The student pilot's failure to maintain an adequate airspeed for landing and his improper landing flare and recovery from a bounced landing.

Findings

Aircraft	Landing flare - Not attained/maintained (Cause) Airspeed - Not attained/maintained (Cause)
Personnel issues	Aircraft control - Student pilot (Cause)

Factual Information

History of Flight

Approach-VFR pattern final	Loss of control in flight Attempted remediation/recovery
Landing-flare/touchdown	Hard landing Abnormal runway contact (Defining event)
Landing-landing roll	Attempted remediation/recovery Loss of control on ground Runway excursion Collision with terr/obj (non-CFIT) Landing gear collapse

Student Pilot Information

Certificate:	Student	Age:	56, Male
Airplane Rating(s):	None	Seat Occupied:	Left
Other Aircraft Rating(s):	None	Restraint Used:	3-point
Instrument Rating(s):	None	Second Pilot Present:	No
Instructor Rating(s):	None	Toxicology Performed:	No
Medical Certification:	Class 3 None	Last FAA Medical Exam:	04/19/2017
Occupational Pilot:	No	Last Flight Review or Equivalent:	
Flight Time:	64 hours (Total, all aircraft), 43 hours (Total, this make and model), 24 hours (Last 90 days, all aircraft), 24 hours (Last 30 days, all aircraft)		

Aircraft and Owner/Operator Information

Aircraft Make:	CESSNA	Registration:	N2460A
Model/Series:	172 R	Aircraft Category:	Airplane
Year of Manufacture:	2000	Amateur Built:	No
Airworthiness Certificate:	Normal; Utility	Serial Number:	17280932
Landing Gear Type:	Tricycle	Seats:	4
Date/Type of Last Inspection:	06/05/2017, 100 Hour	Certified Max Gross Wt.:	2299 lbs
Time Since Last Inspection:		Engines:	1 Reciprocating
Airframe Total Time:	8033.6 Hours at time of accident	Engine Manufacturer:	LYCOMING
ELT:	C91A installed, activated, did not aid in locating accident	Engine Model/Series:	IO-360-L2A
Registered Owner:	SKYDANCE AVIATION LLC	Rated Power:	160 hp
Operator:	EPIX SERVICES LLC	Operating Certificate(s) Held:	None
Operator Does Business As:	Epix Aviation	Operator Designator Code:	

Meteorological Information and Flight Plan

Conditions at Accident Site:	Visual Conditions	Condition of Light:	Day
Observation Facility, Elevation:	EMV, 127 ft msl	Distance from Accident Site:	0 Nautical Miles
Observation Time:	1235 EDT	Direction from Accident Site:	
Lowest Cloud Condition:	Clear	Visibility	10 Miles
Lowest Ceiling:	None	Visibility (RVR):	
Wind Speed/Gusts:	3 knots /	Turbulence Type Forecast/Actual:	/ None
Wind Direction:	230°	Turbulence Severity Forecast/Actual:	/ N/A
Altimeter Setting:	30.22 inches Hg	Temperature/Dew Point:	25°C / 8°C
Precipitation and Obscuration:	No Obscuration; No Precipitation		
Departure Point:	PLYMOUTH, NC (PMZ)	Type of Flight Plan Filed:	None
Destination:	Emporia, VA (EMV)	Type of Clearance:	None
Departure Time:	1207 EDT	Type of Airspace:	Class G

Airport Information

Airport:	EMPORIA-GREENSVILLE RGNL (EMV)	Runway Surface Type:	Asphalt
Airport Elevation:	126 ft	Runway Surface Condition:	Dry
Runway Used:	34	IFR Approach:	None
Runway Length/Width:	5010 ft / 100 ft	VFR Approach/Landing:	Full Stop; Traffic Pattern

Wreckage and Impact Information

Crew Injuries:	1 None	Aircraft Damage:	Substantial
Passenger Injuries:	N/A	Aircraft Fire:	None
Ground Injuries:	N/A	Aircraft Explosion:	None
Total Injuries:	1 None	Latitude, Longitude:	36.686944, -77.482778 (est)

Preventing Similar Accidents

Stay Centered: Preventing Loss of Control During Landing

Loss of control during landing is one of the leading causes of general aviation accidents and is often attributed to operational issues. Although most loss of control during landing accidents do not result in serious injuries, they typically require extensive airplane repairs and may involve potential damage to nearby objects such as fences, signs, and lighting.

Often, wind plays a role in these accidents. Landing in a crosswind presents challenges for pilots of all experience levels. Other wind conditions, such as gusting wind, tailwind, variable wind, or wind shifts, can also interfere with pilots' abilities to land the airplane and maintain directional control.

What can pilots do?

- Evaluate your mental and physical fitness before each flight using the Federal Aviation Administration's (FAA) ["I'M SAFE Checklist."](#) Being emotionally and physically ready will help you stay alert and potentially avoid common and preventable loss of control during landing accidents.
- Check wind conditions and forecasts often. Take time during every approach briefing to fully understand the wind conditions. Use simple rules of thumb to help (for example, if the wind direction is 30 degrees off the runway heading, the crosswind component will be half of the total wind velocity).
- Know your limitations and those of the airplane you are flying. Stay current and practice landings on different runways and during various wind conditions. If possible, practice with a flight instructor on board who can provide useful feedback and techniques for maintaining and improving your landing procedures.
- Prepare early to perform a go around if the approach is not stabilized and does not go as planned or if you do not feel comfortable with the landing. Once you are airborne and stable again, you can decide to attempt to land again, reassess your landing runway, or land at an alternate airport. Incorporate go-around procedures into your recurrent training.
- During landing, stay aligned with the centerline. Any misalignment reduces the time available to react if an unexpected event such as a wind gust or a tire blowout occurs.
- Do not allow the airplane to touch down in a drift or in a crab. For airplanes with tricycle landing gear, do not allow the nosewheel to touch down first.
- Maintain positive control of the airplane throughout the landing and be alert for directional control difficulties immediately upon and after touchdown. A loss of directional control can lead to a nose-over or ground loop, which can cause the airplane to tip or lean enough for the wing tip to contact the ground.
- Stay mentally focused throughout the landing roll and taxi. During landing, avoid distractions, such as conversations with passengers or setting radio frequencies.

Interested in More Information?

The FAA's ["Airplane Flying Handbook"](#) (FAA-H-8083-3B), [chapter 8](#), "Approaches and Landings," provides guidance about how to conduct crosswind approaches and landings and discusses maximum safe crosswind velocities. The handbook can be accessed from the FAA's [website](#) (www.faa.gov).

The FAA Safety Team (FAASTeam) provides access to online training courses, seminars, and webinars as part of the FAA's "WINGS—Pilot Proficiency Program." This program includes targeted flight training designed to help pilots develop the knowledge and skills needed to achieve flight proficiency and to assess and mitigate the risks associated with the most common causes of accidents, including loss of directional control. The courses listed below can be accessed from the [FAASTeam website](#) (www.faasafety.gov).

- [Avoiding Loss of Control](#)
- [Maneuvering: Approach and Landing](#)
- [Normal Approach and Landing](#)

- [Takeoffs, Landings, and Aircraft Control](#)

The Aircraft Owners and Pilots Association Air Safety Institute offers several interactive courses, presentations, publications, and other safety resources that can be accessed from its [website](http://www.aopa.org/asf/) (www.aopa.org/asf/).

The NTSB’s Aviation Information Resources web page, www.nts.gov/air, provides convenient access to NTSB aviation safety products.

The NTSB presents this information to prevent recurrence of similar accidents. Note that this should not be considered guidance from the regulator, nor does this supersede existing FAA Regulations (FARs).

Administrative Information

Investigator In Charge (IIC):	Todd G Gunther	Report Date:	10/24/2018
Additional Participating Persons:	Jay Venable; FAA / FSDO; Richmond, VA		
Publish Date:	10/24/2018		
Note:	This accident report documents the factual circumstances of this accident as described to the NTSB.		
Investigation Docket:	http://dms.nts.gov/pubdms/search/dockList.cfm?mKey=95458		

The National Transportation Safety Board (NTSB), established in 1967, is an independent federal agency mandated by Congress through the Independent Safety Board Act of 1974 to investigate transportation accidents, determine the probable causes of the accidents, issue safety recommendations, study transportation safety issues, and evaluate the safety effectiveness of government agencies involved in transportation. The NTSB makes public its actions and decisions through accident reports, safety studies, special investigation reports, safety recommendations, and statistical reviews.

The Independent Safety Board Act, as codified at 49 U.S.C. Section 1154(b), precludes the admission into evidence or use of any part of an NTSB report related to an incident or accident in a civil action for damages resulting from a matter mentioned in the report. A factual report that may be admissible under 49 U.S.C. § 1154(b) is available [here](#).