



# National Transportation Safety Board Aviation Accident Data Summary

<b>Location:</b>	Lee's Summit, MO	<b>Accident Number:</b>	CEN15CA165
<b>Date &amp; Time:</b>	03/01/2015, 1530 CST	<b>Registration:</b>	N3575X
<b>Aircraft:</b>	PIPER PA 28-181	<b>Injuries:</b>	2 None
<b>Flight Conducted Under:</b>	Part 91: General Aviation - Instructional		

## Analysis

The pilot-receiving-instruction reported that the purpose of the flight was to receive a checkout in the flying club airplane. After completing three uneventful takeoffs and landings, the flight instructor asked the pilot-receiving-instruction to perform a simulated soft-field takeoff from a high-altitude airport. The pilot-receiving-instruction had not performed the requested maneuver previously, which was described as a soft-field takeoff at 50-percent engine power to simulate the atmospheric conditions of a high-altitude airport. Before attempting the takeoff, both pilots agreed that the pilot-receiving-instruction would manipulate the flight controls and that the throttle would be separately controlled by the flight instructor. The pilot-receiving-instruction reported that during the takeoff, shortly after becoming airborne, while still in ground-effect, the airplane encountered an aerodynamic stall. The pilot-receiving-instruction briefly reduced airplane pitch to recover from the aerodynamic stall, but as the airplane drifted toward the right side of the runway he subsequently increased yoke backpressure to keep the airplane airborne. The pilot-receiving-instruction reported that the airplane encountered a second aerodynamic stall after he increased airplane pitch. The airplane subsequently drifted left, crossing back over the runway, before the airplane landed along the left side of the runway. The flight was terminated and the aircraft inspected for damage. The airplane exhibited damage to the tail skid, tail tie-down ring, left wingtip, the nose and left main landing gear, and the propeller. An additional examination established that the aft fuselage bulkhead had sustained substantial damage when the tail struck the runway. The pilot-receiving-instruction reported there were no mechanical failures or malfunctions with the airframe or engine that would have precluded normal operation.

The flight instructor reported that the engine power had been set at 2,100 rpm to simulate the available engine power while operating at a high-altitude airport. He reported that the pilot-receiving-instruction had used excessive pitch control inputs during the initial takeoff roll to keep the nose wheel off the runway, the airplane veered to the right before coming airborne, and that the airplane encountered an aerodynamic stall upon liftoff. The flight instructor reported that the airplane subsequently bounced, drifted to the left, and eventually landed along the left side of the runway. The flight crew's decision to have the flight instructor separately control the throttle during the accident takeoff likely prevented the pilot-receiving-instruction from adequately recovering from the initial aerodynamic stall. Additionally, following the initial aerodynamic stall, there was likely inadequate coordination between the flight crew to reestablish control of the airplane before it impacted the ground.

## Flight Events

- Takeoff - Aerodynamic stall/spin
- Takeoff - Loss of control in flight
- Takeoff - Abnormal runway contact

## Probable Cause

The National Transportation Safety Board determines the probable cause(s) of this accident to be: The pilot-receiving-instruction's excessive pitch control during takeoff, which resulted in an aerodynamic stall shortly after liftoff and the subsequent loss of control. Contributing to the accident was the flight crew's decision to have the flight instructor separately control the throttle while the pilot-receiving-instruction manipulated the flight controls, which resulted in inadequate coordination between the flight crew during the attempted stall recovery.

## Findings

Aircraft-Aircraft oper/perf/capability-Performance/control parameters-Pitch control-Incorrect use/operation - C

Aircraft-Aircraft oper/perf/capability-Performance/control parameters-Angle of attack-Not attained/maintained - C

Personnel issues-Task performance-Use of equip/info-Aircraft control-Student/instructed pilot - C  
Personnel issues-Action/decision-Info processing/decision-Decision making/judgment-Flight crew - F

Personnel issues-Task performance-Communication (personnel)-Lack of communication-Pilot - F  
Personnel issues-Task performance-Communication (personnel)-Lack of communication-Student/instructed pilot - F

## Pilot Information

<b>Certificate:</b>	Private	<b>Age:</b>	31
<b>Airplane Rating(s):</b>	Single-engine Land	<b>Instrument Rating(s):</b>	Airplane
<b>Other Aircraft Rating(s):</b>	None	<b>Instructor Rating(s):</b>	None
<b>Flight Time:</b>	112 hours (Total, all aircraft), 6 hours (Total, this make and model), 79 hours (Pilot In Command, all aircraft), 34 hours (Last 90 days, all aircraft), 17 hours (Last 30 days, all aircraft), 0 hours (Last 24 hours, all aircraft)		

## Flight Instructor Information

<b>Certificate:</b>	Airline Transport; Flight Instructor; Flight Engineer	<b>Age:</b>	77
<b>Airplane Rating(s):</b>	Multi-engine Land; Single-engine Land	<b>Instrument Rating(s):</b>	Airplane
<b>Other Aircraft Rating(s):</b>	None	<b>Instructor Rating(s):</b>	Airplane Single-engine; Instrument Airplane
<b>Flight Time:</b>	(Estimated) 24945 hours (Total, all aircraft), 14438 hours (Pilot In Command, all aircraft), 34 hours (Last 90 days, all aircraft), 23 hours (Last 30 days, all aircraft), 0 hours (Last 24 hours, all aircraft)		

## Aircraft and Owner/Operator Information

<b>Aircraft Manufacturer:</b>	PIPER	<b>Registration:</b>	N3575X
<b>Model/Series:</b>	PA 28-181	<b>Engines:</b>	1 Reciprocating
<b>Operator:</b>	Wing Flying Club, Inc.	<b>Engine Manufacturer:</b>	Lycoming
<b>Air Carrier Operating Certificate:</b>	None	<b>Engine Model/Series:</b>	O-360-A4M
<b>Flight Conducted Under:</b>	Part 91: General Aviation - Instructional		

## Meteorological Information and Flight Plan

<b>Observation Facility, Elevation:</b>	LXT, 1004 ft msl	<b>Weather Information Source:</b>	Weather Observation Facility
<b>Conditions at Accident Site:</b>	Visual Conditions	<b>Lowest Ceiling:</b>	Overcast / 3000 ft agl
<b>Condition of Light:</b>	Day	<b>Wind Speed/Gusts, Direction:</b>	6 knots, 310°
<b>Temperature:</b>	0° C / -7° C	<b>Visibility</b>	10 Miles
<b>Precipitation and Obscuration:</b>	No Obscuration; No Precipitation		
<b>Departure Point:</b>	Lee's Summit, MO (LXT)	<b>Destination:</b>	Lee's Summit, MO (LXT)

## Airport Information

<b>Airport:</b>	Lee's Summit Municipal Airport (LXT)	<b>Runway Surface Type:</b>	Concrete
<b>Runway Used:</b>	36	<b>Runway Surface Condition:</b>	Dry
<b>Runway Length/Width:</b>	4016 ft / 75 ft		

## Wreckage and Impact Information

<b>Crew Injuries:</b>	2 None	<b>Aircraft Damage:</b>	Substantial
<b>Passenger Injuries:</b>	N/A	<b>Aircraft Fire:</b>	None
<b>Ground Injuries:</b>	N/A	<b>Aircraft Explosion:</b>	None

## Administrative Information

<b>Investigator In Charge (IIC):</b>	Andrew T Fox	<b>Adopted Date:</b>	12/17/2015
<b>Note:</b>	This accident report documents the factual circumstances of this accident as described to the NTSB.		
<b>Investigation Docket:</b>	<a href="http://dms.nts.gov/pubdms/search/dockList.cfm?mKey=90833">http://dms.nts.gov/pubdms/search/dockList.cfm?mKey=90833</a>		

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