



# Aviation Investigation Final Report

<b>Location:</b>	Tooele, Utah	<b>Accident Number:</b>	GAA17CA327
<b>Date &amp; Time:</b>	June 6, 2017, 16:15 Local	<b>Registration:</b>	N741TW
<b>Aircraft:</b>	Cessna 172	<b>Aircraft Damage:</b>	Substantial
<b>Defining Event:</b>	Aerodynamic stall/spin	<b>Injuries:</b>	1 None
<b>Flight Conducted Under:</b>	Part 91: General aviation - Instructional		

## Analysis

The solo student pilot reported that, during landing, the airplane "ballooned up and [he] added a little throttle [to] settle the [airplane]." He added that "the [airplane] seemed to settle but felt like it was coming down too fast." He applied full power to go around and reduced the flaps to 20°. He added that "the [airplane] was stalling and so [he] moved the flaps to 0 degrees, which caused the plane to continue to stall." Subsequently, the airplane impacted the ground.

The airplane sustained substantial damage to the wings and empennage.

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

## 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 adequate airspeed and his exceedance of the airplane's critical angle of attack during an attempted go-around, which resulted in an aerodynamic stall.

## Findings

<b>Personnel issues</b>	Aircraft control - Student/instructed pilot
<b>Aircraft</b>	Angle of attack - Capability exceeded
<b>Aircraft</b>	Airspeed - Not attained/maintained

## Factual Information

### History of Flight

Approach-VFR go-around	Aerodynamic stall/spin (Defining event)
------------------------	---

### Student pilot Information

Certificate:	Student	Age:	41,Male
Airplane Rating(s):	None	Seat Occupied:	Left
Other Aircraft Rating(s):	None	Restraint Used:	Unknown
Instrument Rating(s):	None	Second Pilot Present:	No
Instructor Rating(s):	None	Toxicology Performed:	No
Medical Certification:	Class 2 Without waivers/limitations	Last FAA Medical Exam:	July 21, 2016
Occupational Pilot:	No	Last Flight Review or Equivalent:	
Flight Time:	(Estimated) 73 hours (Total, all aircraft), 73 hours (Total, this make and model), 2 hours (Pilot In Command, all aircraft), 20 hours (Last 90 days, all aircraft), 17 hours (Last 30 days, all aircraft)		

### Aircraft and Owner/Operator Information

Aircraft Make:	Cessna	Registration:	N741TW
Model/Series:	172 S	Aircraft Category:	Airplane
Year of Manufacture:	2008	Amateur Built:	
Airworthiness Certificate:	Normal	Serial Number:	172S10117
Landing Gear Type:	Tricycle	Seats:	4
Date/Type of Last Inspection:	April 24, 2017 Annual	Certified Max Gross Wt.:	2558 lbs
Time Since Last Inspection:		Engines:	1 Reciprocating
Airframe Total Time:	3471.4 Hrs as of last inspection	Engine Manufacturer:	LYCOMING
ELT:	C91A installed, activated, aided in locating accident	Engine Model/Series:	IO-360-L2A
Registered Owner:		Rated Power:	180 Horsepower
Operator:		Operating Certificate(s) Held:	Pilot school (141)

## Meteorological Information and Flight Plan

<b>Conditions at Accident Site:</b>	Visual (VMC)	<b>Condition of Light:</b>	Day
<b>Observation Facility, Elevation:</b>	KTVY	<b>Distance from Accident Site:</b>	0 Nautical Miles
<b>Observation Time:</b>	16:10 Local	<b>Direction from Accident Site:</b>	
<b>Lowest Cloud Condition:</b>	Clear	<b>Visibility</b>	10 miles
<b>Lowest Ceiling:</b>		<b>Visibility (RVR):</b>	
<b>Wind Speed/Gusts:</b>	9 knots /	<b>Turbulence Type Forecast/Actual:</b>	/ None
<b>Wind Direction:</b>	310°	<b>Turbulence Severity Forecast/Actual:</b>	/ N/A
<b>Altimeter Setting:</b>	30.11 inches Hg	<b>Temperature/Dew Point:</b>	30°C / 6°C
<b>Precipitation and Obscuration:</b>	No Obscuration; No Precipitation		
<b>Departure Point:</b>	SALT LAKE CITY, UT (SLC )	<b>Type of Flight Plan Filed:</b>	Unknown
<b>Destination:</b>	Tooele, UT (TVY )	<b>Type of Clearance:</b>	VFR
<b>Departure Time:</b>	14:30 Local	<b>Type of Airspace:</b>	Class G

## Airport Information

<b>Airport:</b>	BOLINDER FIELD-TOOELE VALLEY TVY	<b>Runway Surface Type:</b>	Asphalt
<b>Airport Elevation:</b>	4321 ft msl	<b>Runway Surface Condition:</b>	Dry
<b>Runway Used:</b>	35	<b>IFR Approach:</b>	None
<b>Runway Length/Width:</b>	6100 ft / 100 ft	<b>VFR Approach/Landing:</b>	Go around

## Wreckage and Impact Information

<b>Crew Injuries:</b>	1 None	<b>Aircraft Damage:</b>	Substantial
<b>Passenger Injuries:</b>		<b>Aircraft Fire:</b>	None
<b>Ground Injuries:</b>	N/A	<b>Aircraft Explosion:</b>	None
<b>Total Injuries:</b>	1 None	<b>Latitude, Longitude:</b>	40.606666,-112.35083(est)

## Preventing Similar Accidents

### Prevent Aerodynamic Stalls at Low Altitude

While maneuvering an airplane at low altitude in visual meteorological conditions, many pilots fail to avoid conditions that lead to an aerodynamic stall, recognize the warning signs of a stall onset, and

apply appropriate recovery techniques. Many stall accidents result when a pilot is momentarily distracted from the primary task of flying, such as while maneuvering in the airport traffic pattern, during an emergency, or when fixating on ground objects.

An aerodynamic stall can happen at any airspeed, at any altitude, and with any engine power setting. Pilots need to be honest with themselves about their knowledge of stalls and preparedness to recognize and handle a stall situation. Training can help pilots fully understand the stall phenomenon, including angle-of-attack concepts and how weight, center of gravity, turbulence, maneuvering loads and other factors can affect an airplane's stall characteristics. The stall characteristics may be different in each type of plane, so learn them before you fly.

The stall airspeeds marked on the airspeed indicator (for example, the bottom of the green arc and the bottom of the white arc) typically represent steady flight speeds at 1G at the airplane's maximum gross weight in the specified configuration. Maneuvering loads and other factors can increase the airspeed at which the airplane will stall. For example, increasing bank angle can increase stall speed exponentially.

Reducing angle of attack by lowering the airplane's nose at the first indication of a stall is the most important immediate response for stall avoidance and stall recovery. This may seem counterintuitive at low altitudes, but is a necessary first step.

See [http://www.nts.gov/safety/safety-alerts/documents/SA\\_019.pdf](http://www.nts.gov/safety/safety-alerts/documents/SA_019.pdf) for additional resources.

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

<b>Investigator In Charge (IIC):</b>	Vanover, Jackie
<b>Additional Participating Persons:</b>	Lundsay Carlson; FAA; Salt Lake City, UT
<b>Original Publish Date:</b>	January 23, 2018
<b>Note:</b>	This accident report documents the factual circumstances of this accident as described to the NTSB.
<b>Investigation Docket:</b>	<a href="https://data.nts.gov/Docket?ProjectID=95317">https://data.nts.gov/Docket?ProjectID=95317</a>

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](#).