



National Transportation Safety Board Aviation Accident Final Report

Location:	Canon City, CO	Accident Number:	GAA17CA125
Date & Time:	01/28/2017, 1445 MST	Registration:	N16GL
Aircraft:	GREAT LAKES 2T1A	Aircraft Damage:	Substantial
Defining Event:	Loss of control on ground	Injuries:	2 None
Flight Conducted Under:	Part 91: General Aviation - Personal		

Analysis

The pilot of the tailwheel-equipped biplane reported that she extended the downwind leg due to other aircraft in the traffic pattern and that, while on the extended final, she put the biplane in a "slip." During the slip, the windsock was out of view. She further reported that, during the landing flare, she noticed that the "ground-speed" was higher than normal and that "about 800 ft" after touchdown, the biplane "violently swerved to the right." She attempted to recover with rudder inputs; however, the biplane veered off the runway and came to rest inverted.

The biplane sustained substantial damage to the empennage.

The pilot reported that there were no preaccident mechanical failures or malfunctions with the airframe or engine 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 pilot's failure to maintain directional control during the landing roll. Contributing to the accident was the pilot's unstabilized approach.

Findings

Aircraft	Directional control - Not attained/maintained (Cause) Descent/approach/glide path - Not attained/maintained (Factor)
Personnel issues	Aircraft control - Pilot (Cause)

Factual Information

History of Flight

Landing	Loss of control on ground (Defining event) Attempted remediation/recovery Runway excursion Nose over/nose down
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Pilot Information

Certificate:	Commercial	Age:	58, Female
Airplane Rating(s):	Single-engine Land	Seat Occupied:	Rear
Other Aircraft Rating(s):	None	Restraint Used:	5-point
Instrument Rating(s):	None	Second Pilot Present:	No
Instructor Rating(s):	None	Toxicology Performed:	No
Medical Certification:	Class 2 With Waivers/Limitations	Last FAA Medical Exam:	07/27/2016
Occupational Pilot:	No	Last Flight Review or Equivalent:	07/02/2015
Flight Time:	(Estimated) 779 hours (Total, all aircraft), 62 hours (Total, this make and model), 639 hours (Pilot In Command, all aircraft), 25 hours (Last 90 days, all aircraft), 6 hours (Last 30 days, all aircraft), 1 hours (Last 24 hours, all aircraft)		

Aircraft and Owner/Operator Information

Aircraft Make:	GREAT LAKES	Registration:	N16GL
Model/Series:	2T1A 2	Aircraft Category:	Airplane
Year of Manufacture:	1977	Amateur Built:	No
Airworthiness Certificate:	Aerobatic	Serial Number:	0772
Landing Gear Type:	Tailwheel	Seats:	2
Date/Type of Last Inspection:	08/19/2016, Annual	Certified Max Gross Wt.:	1800 lbs
Time Since Last Inspection:		Engines:	1 Reciprocating
Airframe Total Time:	1124.3 Hours at time of accident	Engine Manufacturer:	Lycoming
ELT:	C91A installed, activated, did not aid in locating accident	Engine Model/Series:	AEIO-360-B1G6
Registered Owner:	On file	Rated Power:	180 hp
Operator:	On file	Operating Certificate(s) Held:	Commercial Air Tour (136)

Meteorological Information and Flight Plan

Conditions at Accident Site:	Visual Conditions	Condition of Light:	Day
Observation Facility, Elevation:	K1V6, 5838 ft msl	Distance from Accident Site:	22 Nautical Miles
Observation Time:	2150 UTC	Direction from Accident Site:	48°
Lowest Cloud Condition:	Clear	Visibility	10 Miles
Lowest Ceiling:	None	Visibility (RVR):	
Wind Speed/Gusts:	Calm /	Turbulence Type Forecast/Actual:	/ None
Wind Direction:		Turbulence Severity Forecast/Actual:	/ N/A
Altimeter Setting:	30.24 inches Hg	Temperature/Dew Point:	13°C / -13°C
Precipitation and Obscuration:	No Obscuration; No Precipitation		
Departure Point:	Canon City, CO (1V6)	Type of Flight Plan Filed:	None
Destination:	Canon City, CO (1V6)	Type of Clearance:	None
Departure Time:	1350 MST	Type of Airspace:	Class G

Airport Information

Airport:	FREMONT COUNTY (1V6)	Runway Surface Type:	Asphalt
Airport Elevation:	5442 ft	Runway Surface Condition:	Dry
Runway Used:	11	IFR Approach:	None
Runway Length/Width:	5399 ft / 75 ft	VFR Approach/Landing:	Full Stop; Traffic Pattern

Wreckage and Impact Information

Crew Injuries:	1 None	Aircraft Damage:	Substantial
Passenger Injuries:	1 None	Aircraft Fire:	None
Ground Injuries:	N/A	Aircraft Explosion:	None
Total Injuries:	2 None	Latitude, Longitude:	38.429444, -105.107500 (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):	Eric A Swenson	Report Date:	04/04/2017
Additional Participating Persons:	Andrew Eagleton; FAA; Denver, CO		
Publish Date:	04/04/2017		
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=94664		

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](#).