



# Aviation Investigation Final Report

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<b>Location:</b>	Longmont, Colorado	<b>Accident Number:</b>	CEN18LA102
<b>Date &amp; Time:</b>	February 16, 2018, 13:20 Local	<b>Registration:</b>	N89ER
<b>Aircraft:</b>	SCHEINEMAN-VAN BUREN T 18	<b>Aircraft Damage:</b>	Substantial
<b>Defining Event:</b>	Loss of control on ground	<b>Injuries:</b>	2 Serious
<b>Flight Conducted Under:</b>	Part 91: General aviation - Instructional		

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## Analysis

The tailwheel-qualified private pilot was conducting his first flight in the T-18 airplane with a flight instructor. After several local flight maneuvers and about seven uneventful landings, he planned to execute a full-stop landing. During the landing roll, the airplane turned right as it decelerated. The pilot attempted to correct the turn with left rudder control and braking, but the airplane groundlooped, departed the runway surface, and nosed over, which resulted in damage to the left wing and vertical stabilizer. The pilot was unsure if he had applied any braking pressure during the landing before having directional control issues. The flight instructor did not recall the accident sequence due to his injuries. Postaccident examination of the airplane revealed no evidence of mechanical malfunctions or failures, except for a fractured rudder cable. Examination of the cable revealed an overstress separation, which was consistent with accident damage. Thus, the pilot likely failed to maintain directional control during the landing roll and the flight instructor did not take timely remedial action to maintain runway heading.

## 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 and the flight instructor's delayed remedial action, which resulted in a groundloop and nose over.

## Findings

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<b>Personnel issues</b>	Aircraft control - Pilot
<b>Personnel issues</b>	Delayed action - Instructor/check pilot
<b>Aircraft</b>	Directional control - Not attained/maintained

## Factual Information

### History of Flight

<b>Landing</b>	Loss of control on ground (Defining event)
<b>Landing-landing roll</b>	Nose over/nose down

On February 16, 2018, about 1320 mountain standard time, a Scheineman-Van Buren T-18 airplane, N89ER, was substantially damaged while landing at Vance Brand Airport (LMO), Longmont, Colorado. The pilot and flight instructor were seriously injured. The airplane was registered to and operated by the pilot under the provisions of Title 14 *Code of Federal Regulations* Part 91 as a training flight. Day visual meteorological conditions prevailed for the local flight, which departed without a flight plan about 1220.

The purpose of the flight was to orient the pilot to the airplane, which he had recently purchased. The pilot had flown about 200 hours in other tailwheel airplanes. After the pilot and flight instructor departed LMO, the pilot flew several local flight maneuvers, including slow flight, stalls, and steep turns. Returning to LMO, the pilot executed about uneventful seven landings. During the last landing, planned as a full stop, the airplane turned to the right as it decelerated below about 40 knots. The pilot attempted to correct the turn by applying left rudder control and with braking, but the airplane ground looped, departed the runway surface, and nosed over, damaging the left wing and vertical stabilizer. The pilot was unsure if he had applied any braking during the landing prior to having directional control issues. The flight instructor did not recall the last landing due to his injuries.

Examination of the airplane by a Federal Aviation Administration inspector revealed no anomalies, except for a fractured rudder cable. No wear or chaffing marks were observed on the rudder cable, and no anomalies were noted with the installation. The rudder cable specifications matched the airplane build instructions. The National Transportation Safety Board Materials Laboratory examined the rudder cable with a 5x to 50x magnification stereo microscope and determined that fracture surfaces were consistent with an overstress separation.

## Pilot Information

<b>Certificate:</b>	Private	<b>Age:</b>	28, Male
<b>Airplane Rating(s):</b>	Single-engine land	<b>Seat Occupied:</b>	Left
<b>Other Aircraft Rating(s):</b>	None	<b>Restraint Used:</b>	4-point
<b>Instrument Rating(s):</b>	None	<b>Second Pilot Present:</b>	Yes
<b>Instructor Rating(s):</b>	None	<b>Toxicology Performed:</b>	No
<b>Medical Certification:</b>	Class 3 Without waivers/limitations	<b>Last FAA Medical Exam:</b>	
<b>Occupational Pilot:</b>	No	<b>Last Flight Review or Equivalent:</b>	
<b>Flight Time:</b>	360 hours (Total, all aircraft), 1 hours (Total, this make and model)		

## Flight instructor Information

<b>Certificate:</b>	Airline transport; Flight instructor	<b>Age:</b>	81, Male
<b>Airplane Rating(s):</b>	Single-engine land; Multi-engine land	<b>Seat Occupied:</b>	Right
<b>Other Aircraft Rating(s):</b>	Glider	<b>Restraint Used:</b>	4-point
<b>Instrument Rating(s):</b>	Airplane	<b>Second Pilot Present:</b>	Yes
<b>Instructor Rating(s):</b>	Airplane multi-engine; Airplane single-engine	<b>Toxicology Performed:</b>	No
<b>Medical Certification:</b>	Class 2 With waivers/limitations	<b>Last FAA Medical Exam:</b>	January 16, 2017
<b>Occupational Pilot:</b>	Yes	<b>Last Flight Review or Equivalent:</b>	November 18, 2016
<b>Flight Time:</b>	15000 hours (Total, all aircraft), 500 hours (Total, this make and model), 25 hours (Last 90 days, all aircraft), 10 hours (Last 30 days, all aircraft), 0 hours (Last 24 hours, all aircraft)		

## Aircraft and Owner/Operator Information

<b>Aircraft Make:</b>	SCHEINEMAN-VAN BUREN	<b>Registration:</b>	N89ER
<b>Model/Series:</b>	T 18 UNDESIGNAT	<b>Aircraft Category:</b>	Airplane
<b>Year of Manufacture:</b>	1978	<b>Amateur Built:</b>	Yes
<b>Airworthiness Certificate:</b>	Experimental (Special)	<b>Serial Number:</b>	1106
<b>Landing Gear Type:</b>	Tailwheel	<b>Seats:</b>	2
<b>Date/Type of Last Inspection:</b>	July 3, 2017 Annual	<b>Certified Max Gross Wt.:</b>	
<b>Time Since Last Inspection:</b>		<b>Engines:</b>	Reciprocating
<b>Airframe Total Time:</b>	1634 Hrs as of last inspection	<b>Engine Manufacturer:</b>	Lycoming
<b>ELT:</b>	Installed	<b>Engine Model/Series:</b>	O-320-B3B
<b>Registered Owner:</b>	On file	<b>Rated Power:</b>	160 Horsepower
<b>Operator:</b>	On file	<b>Operating Certificate(s) Held:</b>	None

## Meteorological Information and Flight Plan

<b>Conditions at Accident Site:</b>	Visual (VMC)	<b>Condition of Light:</b>	Day
<b>Observation Facility, Elevation:</b>	KLMO,5056 ft msl	<b>Distance from Accident Site:</b>	0 Nautical Miles
<b>Observation Time:</b>	13:15 Local	<b>Direction from Accident Site:</b>	315°
<b>Lowest Cloud Condition:</b>	Clear	<b>Visibility</b>	10 miles
<b>Lowest Ceiling:</b>	None	<b>Visibility (RVR):</b>	
<b>Wind Speed/Gusts:</b>	3 knots /	<b>Turbulence Type Forecast/Actual:</b>	None / None
<b>Wind Direction:</b>	80°	<b>Turbulence Severity Forecast/Actual:</b>	N/A / N/A
<b>Altimeter Setting:</b>	29.98 inches Hg	<b>Temperature/Dew Point:</b>	5°C / -8°C
<b>Precipitation and Obscuration:</b>	No Obscuration; No Precipitation		
<b>Departure Point:</b>	Longmont, CO (LMO )	<b>Type of Flight Plan Filed:</b>	None
<b>Destination:</b>	Longmont, CO (LMO )	<b>Type of Clearance:</b>	None
<b>Departure Time:</b>	12:20 Local	<b>Type of Airspace:</b>	Class E

## Airport Information

<b>Airport:</b>	VANCE BRAND LMO	<b>Runway Surface Type:</b>	Concrete
<b>Airport Elevation:</b>	5055 ft msl	<b>Runway Surface Condition:</b>	Dry
<b>Runway Used:</b>	29	<b>IFR Approach:</b>	None
<b>Runway Length/Width:</b>	4799 ft / 75 ft	<b>VFR Approach/Landing:</b>	Traffic pattern

## Wreckage and Impact Information

<b>Crew Injuries:</b>	2 Serious	<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>	2 Serious	<b>Latitude, Longitude:</b>	40.164443,-105.163612(est)

## Administrative Information

<b>Investigator In Charge (IIC):</b>	Folkerts, Michael
<b>Additional Participating Persons:</b>	Mark Petrosky; Flight Standards District Office; Denver, CO
<b>Original Publish Date:</b>	November 6, 2019
<b>Last Revision Date:</b>	
<b>Investigation Class:</b>	<a href="#">Class</a>
<b>Note:</b>	The NTSB did not travel to the scene of this accident.
<b>Investigation Docket:</b>	<a href="https://data.ntsb.gov/Docket?ProjectID=96754">https://data.ntsb.gov/Docket?ProjectID=96754</a>

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](#).