Aviation Investigation Final Report

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

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

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

Factual Information

History of Flight

Landing	Loss of control on ground (Defining event)
Landing-landing roll	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

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

Flight instructor Information

Certificate:	Airline transport; Flight instructor	**Age:**	81,Male
Airplane Rating(s):	Single-engine land; Multi-engine land	**Seat Occupied:**	Right
Other Aircraft Rating(s):	Glider	**Restraint Used:**	4-point
Instrument Rating(s):	Airplane	**Second Pilot Present:**	Yes
Instructor Rating(s):	Airplane multi-engine; Airplane single-engine	**Toxicology Performed:**	No
Medical Certification:	Class 2 With waivers/limitations	**Last FAA Medical Exam:**	January 16, 2017
Occupational Pilot:	Yes	**Last Flight Review or Equivalent:**	November 18, 2016
Flight Time:	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

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

Meteorological Information and Flight Plan

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

Airport Information

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

Wreckage and Impact Information

Crew Injuries:	2 Serious	**Aircraft Damage:**	Substantial
Passenger Injuries:		**Aircraft Fire:**	None
Ground Injuries:	N/A	**Aircraft Explosion:**	None
Total Injuries:	2 Serious	**Latitude, Longitude:**	40.164443,-105.163612(est)

Administrative Information

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