Aviation Investigation Final Report

Location:	Lansing, Michigan	**Accident Number:**	CEN23LA363
Date & Time:	August 15, 2023, 08:05 Local	**Registration:**	N261SW
Aircraft:	Beech C-99	**Aircraft Damage:**	Substantial
Defining Event:	Loss of control in flight	**Injuries:**	1 Minor
Flight Conducted Under:	Part 135: Air taxi & commuter - Non-scheduled		

Analysis

The pilot reported that after a normal start and taxi, the airplane was cleared for takeoff. During the takeoff roll, the airplane drifted right and the pilot corrected with the left rudder. When the airplane reached 100 knots, he rotated the airplane, and about 30 feet in altitude, the airplane experienced a roll to the right. The pilot tried to correct the roll with left rudder but was unable to provide sufficient left rudder. At this point, the airplane had drifted to the right of the runway and over the adjacent parallel taxiway. He was able to regain partial control by reducing engine power and banking the airplane to the left. The pilot attempted to land on the taxiway but was unable to judge his height above ground due to the low visibility, and subsequently impacted terrain to the right of the taxiway. Both wings and the fuselage sustained substantial damage. Prior to exiting the airplane, the pilot noted that the rudder trim was set to the full nose-right position. The pilot reported no preaccident mechanical malfunctions or failures with the airplane that would have precluded normal operation.

Prior to the accident, maintenance was completed that consisted of an “Event II & Routine” inspection. The inspection procedure required the rudder trim system to be lubricated, a trim tab free play inspection, and an operational check prior to returning the airplane to service. Review of the maintenance procedures revealed there was no guidance on returning the rudder trim control system back to a neutral position at completion of the inspection.

Probable Cause and Findings

The National Transportation Safety Board determines the probable cause(s) of this accident to be:

The pilot’s failure to properly set the rudder trim position which resulted in a loss of directional control during takeoff. Contributing was the pilot’s inadequate checklist procedures prior to takeoff.

Findings

Personnel issues	Aircraft control - Pilot
Aircraft	Rudder tab control system - Incorrect use/operation
Personnel issues	Use of checklist - Pilot
Personnel issues	Preflight inspection - Pilot
Organizational issues	Adequacy of policy/proc - Operator
Aircraft	Return to service - Related maintenance info

Factual Information

History of Flight

Prior to flight	Aircraft maintenance event
Prior to flight	Preflight or dispatch event
Initial climb	Loss of control in flight (Defining event)
Initial climb	Collision with terr/obj (non-CFIT)

Pilot Information

Certificate:	Commercial	**Age:**	27,Male
Airplane Rating(s):	Single-engine land; Multi-engine land	**Seat Occupied:**	Right
Other Aircraft Rating(s):	None	**Restraint Used:**	4-point
Instrument Rating(s):	Airplane	**Second Pilot Present:**	No
Instructor Rating(s):	None	**Toxicology Performed:**	
Medical Certification:	Class 1 Without waivers/limitations	**Last FAA Medical Exam:**	July 6, 2023
Occupational Pilot:	Yes	**Last Flight Review or Equivalent:**	August 4, 2023
Flight Time:	1218 hours (Total, all aircraft), 26 hours (Total, this make and model), 397 hours (Pilot In Command, all aircraft), 66 hours (Last 90 days, all aircraft), 26 hours (Last 30 days, all aircraft), 0 hours (Last 24 hours, all aircraft)		

Aircraft and Owner/Operator Information

Aircraft Make:	Beech	**Registration:**	N261SW
Model/Series:	C-99	**Aircraft Category:**	Airplane
Year of Manufacture:	1983	**Amateur Built:**	
Airworthiness Certificate:	Normal	**Serial Number:**	U-202
Landing Gear Type:	Retractable - Tricycle	**Seats:**	2
Date/Type of Last Inspection:	August 14, 2023 AAIP	**Certified Max Gross Wt.:**	11300 lbs
Time Since Last Inspection:		**Engines:**	2 Turbo prop
Airframe Total Time:	27642.9 Hrs at time of accident	**Engine Manufacturer:**	Pratt & Whitney
ELT:	C126 installed, not activated	**Engine Model/Series:**	PT6A-36
Registered Owner:	UAS TRANSERVICES INC	**Rated Power:**	750 Horsepower
Operator:	Ameriflight, LLC	**Operating Certificate(s) Held:**	On-demand air taxi (135)
Operator Does Business As:	Ameriflight	**Operator Designator Code:**	JIKA

Meteorological Information and Flight Plan

Conditions at Accident Site:	Instrument (IMC)	**Condition of Light:**	Day
Observation Facility, Elevation:	KLAN,857 ft msl	**Distance from Accident Site:**	1 Nautical Miles
Observation Time:	08:26 Local	**Direction from Accident Site:**	257°
Lowest Cloud Condition:	Scattered / 1100 ft AGL	**Visibility**	0.75 miles
Lowest Ceiling:	Broken / 3900 ft AGL	**Visibility (RVR):**	
Wind Speed/Gusts:	18 knots / 27 knots	**Turbulence Type Forecast/Actual:**	/
Wind Direction:	40°	**Turbulence Severity Forecast/Actual:**	/
Altimeter Setting:	29.8 inches Hg	**Temperature/Dew Point:**	17°C / 15°C
Precipitation and Obscuration:	Moderate - None - Mist		
Departure Point:	Lansing, MI (LAN)	**Type of Flight Plan Filed:**	IFR
Destination:	Pellston, MI (KPLN)	**Type of Clearance:**	IFR
Departure Time:	08:00 Local	**Type of Airspace:**	Class C

Airport Information

Airport:	Captial Regional International LAN	**Runway Surface Type:**	Asphalt
Airport Elevation:	860 ft msl	**Runway Surface Condition:**	Wet
Runway Used:	10R	**IFR Approach:**	None
Runway Length/Width:	8506 ft / 150 ft	**VFR Approach/Landing:**	None

Wreckage and Impact Information

Crew Injuries:	1 Minor	**Aircraft Damage:**	Substantial
Passenger Injuries:	N/A	**Aircraft Fire:**	None
Ground Injuries:	N/A	**Aircraft Explosion:**	None
Total Injuries:	1 Minor	**Latitude, Longitude:**	42.778237,-84.586755

Preventing Similar Accidents

Perform Advanced Preflight After Maintenance (SA-041)

The Problem

In-flight emergencies, accidents, and deaths have occurred after pilots flew aircraft with incorrectly rigged flight control or trim systems. Maintenance personnel who serviced or checked the systems did not recognize that the control or trim surfaces were moving in the wrong direction. Pilots who flew the airplanes did not detect the control anomalies during their preflight checks. In many cases, although maintenance personnel made mistakes, the pilots could have prevented the accidents by performing thorough or advanced preflight checks.

What can you do?

- Become familiar with the normal directional movement of the flight controls and trim surfaces of the aircraft you fly before it undergoes maintenance. It is easier to recognize “abnormal” if you are already very familiar with what “normal” looks like.
- After maintenance, check systems more thoroughly than the normal preflight checklist implies. For example, if a preflight checklist states, “Trim – Set Takeoff,” verify not only the trim setting but also proper directional travel.
- Be prepared to abort the takeoff if something does not seem right.
- Avoid interruptions and distractions during your preflight inspection to ensure that you do not skip or misevaluate the items you are checking.
- If you suspect that there is a problem with a flight control or trim system, ask qualified maintenance personnel to inspect the aircraft. Do not attempt to perform such work yourself if you are not appropriately qualified, certificated, and authorized to do so.

See https://www.ntsb.gov/Advocacy/safety-alerts/Documents/SA-041.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

Investigator In Charge (IIC):	Finne, Andrew
Additional Participating Persons:	Norris, Steven; FAA-FSDO; Grand Rapids , MI
Original Publish Date:	November 9, 2023
Last Revision Date:	
Investigation Class:	Class 4
Note:	The NTSB did not travel to the scene of this accident.
Investigation Docket:	https://data.ntsb.gov/Docket?ProjectID=192876