



National Transportation Safety Board Aviation Accident Final Report

Location:	Albuquerque, NM	Accident Number:	CEN17LA216
Date & Time:	06/04/2017, 0824 MDT	Registration:	N78DZ
Aircraft:	WILLIAM D TELFAIR/ZIA Z TELFAI EXCALIBUR	Aircraft Damage:	Substantial
Defining Event:	Flight control sys malf/fail	Injuries:	1 None
Flight Conducted Under:	Part 91: General Aviation - Personal		

Analysis

The commercial pilot was conducting a personal flight in the experimental amateur-built airplane. After about 1 hour of flight, the airplane was straight and level, at an airspeed of about 75 mph, when the pitch control became erratic. The pilot stated that the control stick started "slamming" fore and aft to the limits, the airplane nose began pitching up and down, and the airplane began buffeting "like it was going to come apart." The pilot declared an emergency and reduced airspeed to 50 to 60 mph, which slightly lessened the fore-and-aft stick movement and pitch but did not control it. The pilot turned to clear steep terrain and chose a field for an emergency landing. He was able to make final directional corrections and flew the airplane to landing about 40 to 45 mph and 200 to 300 ft per minute rate of descent. The left wing and horizontal stabilizer struck the ground. Examination of the airplane revealed a broken right elevator control rod; the left elevator control rod was not broken and moved normally. The broken control rod was a factory-supplied, 1/2-inch aluminum tube with bearings at each end. The attach points of the control rods appeared to be intact, the bearings were still connected and safety wired, and all other control rod linkages were connected. Further examination revealed no indication of any preexisting failure on the fracture surface of the right elevator control rod. The deformation of the rod was indicative of a bending failure. The pilot reported after the accident that he may have encountered flutter, but it could not be determined when or if that occurred.

Probable Cause and Findings

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

The loss of pitch control due to the overload failure of the control rod.

Findings

Aircraft	Pitch control - Attain/maintain not possible (Cause) Elevator control system - Failure (Cause)
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Factual Information

On June 4, 2017, about 0824 mountain daylight time, an Excaliber experimental light sport airplane, N78DZ, was substantially damaged when it impacted terrain near Albuquerque, New Mexico, during an emergency landing due to flight control anomalies. The commercial pilot was not injured. Visual meteorological conditions prevailed throughout the area and a flight plan was not filed. The airplane was registered to the pilot and the personal flight was being conducted under the provisions of Title 14 *Code of Federal Regulations* Part 91. The local flight originated at 0715 from the Double Eagle Airport (AEG), Albuquerque, New Mexico, and was enroute back to AEG when the accident occurred.

According to the pilot, he had been flying a little over an hour without any problems since takeoff from AEG. He was flying straight and level, about 75 mph (below never-exceed speed), when the pitch control became erratic. The control stick started "slamming" fore and aft to the limits, the airplane nose began pitching up and down, and the airplane began buffeting "like it was going to come apart." The pilot declared an emergency and reduced airspeed to 50 to 60 mph, which slightly lessened the fore and aft stick movement and pitch, but did not control it. The pilot turned to clear steep terrain and choose a relatively flat field for an emergency landing. He was able to make final directional corrections and flew the airplane to landing about 40 to 45 mph and 200 to 300 ft per minute rate of descent. The airplane remained upright, but the nose gear and the left main gear sheared off, the airplane turned 180°, and the left wing and horizontal stabilizer struck the ground.

Examination of the aircraft by a Federal Aviation Administration inspector and the pilot after the accident revealed a broken, right elevator control rod. The left elevator control rod was not broken. The control rod that separated was a factory-supplied, 1/2-inch aluminum tube with bearings at each end. The attach points of the control rods appeared to be intact. The bearings were still connected and safety wired and all other control rod linkages and attach points were connected. There was normal movement of the left elevator control system (rod still intact). The damaged control rod (right elevator) and the intact control rod (left elevator) were compared and examined by a National Transportation Safety Board structures engineer. According to the engineer, there was no indication of any pre-existing failure on the fracture surface of the right elevator control rod. The deformation of the rod was indicative of a bending failure of the rod.

The pilot reported after the accident that he may have encountered flutter.

History of Flight

Maneuvering	Flight control sys malf/fail (Defining event)
Emergency descent	Off-field or emergency landing Collision with terr/obj (non-CFIT)

Pilot Information

Certificate:	Commercial; Private	Age:	79, Male
Airplane Rating(s):	Single-engine Land	Seat Occupied:	Front
Other Aircraft Rating(s):	None	Restraint Used:	
Instrument Rating(s):	None	Second Pilot Present:	No
Instructor Rating(s):	None	Toxicology Performed:	No
Medical Certification:	Class 3 With Waivers/Limitations	Last FAA Medical Exam:	02/23/2013
Occupational Pilot:	No	Last Flight Review or Equivalent:	02/03/2017
Flight Time:	4978 hours (Total, all aircraft), 64 hours (Total, this make and model), 4800 hours (Pilot In Command, all aircraft), 5 hours (Last 90 days, all aircraft), 5 hours (Last 30 days, all aircraft), 1 hours (Last 24 hours, all aircraft)		

Aircraft and Owner/Operator Information

Aircraft Make:	WILLIAM D TELFAIR/ZIA Z TELFAI	Registration:	N78DZ
Model/Series:	EXCALIBUR NO SERIES	Aircraft Category:	Airplane
Year of Manufacture:	2015	Amateur Built:	Yes
Airworthiness Certificate:	Experimental	Serial Number:	2614
Landing Gear Type:	Tricycle	Seats:	2
Date/Type of Last Inspection:	04/17/2017, Condition	Certified Max Gross Wt.:	
Time Since Last Inspection:	64 Hours	Engines:	Reciprocating
Airframe Total Time:	64 Hours at time of accident	Engine Manufacturer:	Rotax
ELT:	Not installed	Engine Model/Series:	582UL-99
Registered Owner:	On file	Rated Power:	65 hp
Operator:	On file	Operating Certificate(s) Held:	None

Meteorological Information and Flight Plan

Conditions at Accident Site:	Visual Conditions	Condition of Light:	Day
Observation Facility, Elevation:	ABQ, 5354 ft msl	Distance from Accident Site:	15 Nautical Miles
Observation Time:	0824 MDT	Direction from Accident Site:	230°
Lowest Cloud Condition:	Clear	Visibility	10 Miles
Lowest Ceiling:	None	Visibility (RVR):	
Wind Speed/Gusts:	Light and Variable /	Turbulence Type Forecast/Actual:	/ None
Wind Direction:	Variable	Turbulence Severity Forecast/Actual:	/
Altimeter Setting:	30.2 inches Hg	Temperature/Dew Point:	18° C / 9° C
Precipitation and Obscuration:			
Departure Point:	Albuquerque, NM (AEG)	Type of Flight Plan Filed:	None
Destination:	Albuquerque, NM (AEG)	Type of Clearance:	None
Departure Time:	0715 MDT	Type of Airspace:	Class E

Airport Information

Airport:	Double Eagle (AEG)	Runway Surface Type:	N/A
Airport Elevation:	5837 ft	Runway Surface Condition:	Dry
Runway Used:	N/A	IFR Approach:	None
Runway Length/Width:		VFR Approach/Landing:	Forced Landing

Wreckage and Impact Information

Crew Injuries:	1 None	Aircraft Damage:	Substantial
Passenger Injuries:	N/A	Aircraft Fire:	None
Ground Injuries:	N/A	Aircraft Explosion:	None
Total Injuries:	1 None	Latitude, Longitude:	35.113889, -106.890833 (est)

Administrative Information

Investigator In Charge (IIC):	Alexander Lemishko	Report Date:	04/13/2020
Additional Participating Persons:	Frank Waterhouse; FAA FSDO; Albuquerque, NM		
Publish Date:	04/13/2020		
Note:	The NTSB did not travel to the scene of this accident.		
Investigation Docket:	http://dms.nts.gov/pubdms/search/dockList.cfm?mKey=95324		

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