



# National Transportation Safety Board Aviation Accident Final Report

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<b>Location:</b>	Toledo, OH	<b>Accident Number:</b>	CEN11LA455
<b>Date &amp; Time:</b>	07/01/2011, 1830 EDT	<b>Registration:</b>	N433GC
<b>Aircraft:</b>	Couvillion S-17	<b>Aircraft Damage:</b>	Substantial
<b>Defining Event:</b>	Loss of control in flight	<b>Injuries:</b>	1 None
<b>Flight Conducted Under:</b>	Part 91: General Aviation - Personal		

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## Analysis

The pilot reported that he found no discrepancies during the preflight inspection and that the engine run-up and before-takeoff checks were normal. Immediately after takeoff, the airplane entered an uncommanded right turn. The pilot was unable to keep the airplane from turning to the right as it climbed to about 200 to 300 feet above the ground. He pulled the throttle to idle and landed the airplane in a field. The touchdown was hard, and the airplane impacted a rock pile during the landing roll. Postaccident examination revealed that the right rudder pedal was sheared off and that the right rudder cable had slack in it and was twisted around the right rudder horn attachment fitting. If this twist had existing during the flight, it could have caused the uncommanded right turn; however, it is likely that the cable twisted around the rudder horn during the impact when the right rudder pedal separated and allowed the cable to go slack. Additionally, when the cable was straightened, it was noted to be the proper length, and rudder cable continuity was confirmed. Flight control cable continuity was also confirmed from the flight controls to the ailerons and the elevator. No mechanical discrepancy was noted that would have resulted in the uncontrolled right turn.

## Probable Cause and Findings

The National Transportation Safety Board determines the probable cause(s) of this accident to be: The loss of control during initial climb for undetermined reasons, which resulted in a hard landing.

## Findings

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<b>Aircraft</b>	Performance/control parameters - Attain/maintain not possible (Cause)
<b>Not determined</b>	Not determined - Unknown/Not determined (Cause)

## Factual Information

On July 1, 2011, about 1830 eastern daylight time, an experimental amateur-built Couvillion S-17, N433GC, sustained substantial damage when it impacted the terrain following a loss of control during takeoff from runway 04 at the Toledo Executive Airport (TDZ), Toledo, Ohio. The private pilot was not injured. The airplane was registered and operated by the pilot as a personal flight under the provisions of the 14 Code of Federal Regulations Part 91. Visual meteorological conditions prevailed at the time of the accident. The airplane was departing on a local flight.

The pilot reported that it was his first flight in the airplane since he had purchased it from the previous owner. He reported that he inspected the flight controls and the cable attachment points during the preflight inspection and they appeared normal. The engine run-up and before takeoff checks were normal.

He reported that he applied the throttle slowly to full power during takeoff. The airplane tracked straight on the runway until after liftoff. He reported that immediately after liftoff, the airplane entered into a sweeping right turn. The pilot was unable to keep the airplane from turning to the right as it climbed to about 200 – 300 feet above the ground. The airplane had turned about 180 degrees when he pulled the throttle to idle and attempted to land in a field. The airplane continued to turn as it overflew a fence, landed hard, and impacted a rock pile during the landing roll.

A Federal Aviation Administration inspector examined the airplane and reported that it had sustained substantial damage. The airframe was twisted and the left wing bent. The right main landing gear was sheared off, and the right horizontal stabilizer was torn on the bottom. The right rudder pedal was sheared off. The right rudder cable was found slack and the cable attachment was found twisted around the right rudder horn attachment fitting. When the cable was straightened, it was the proper length and it confirmed rudder cable continuity. Flight control cable continuity was confirmed from the flight controls to their respective attach points on the flight control surfaces. No mechanical discrepancy was noted that could explain the reason for the uncontrolled right turn. The airplane had a total of 4.1 hours of flight time at the time of the accident.

The pilot held a private pilot certificate with single-engine and multi-engine airplane land ratings and a single-engine seaplane rating. He held a third class medical certificate. He reported that he had a total of 1,353 flight hours, but with no flight time in the make and model of the accident airplane. He had built and flown a two-seat experimental amateur-built airplane that was similar to the accident airplane, and had logged about 150 – 200 hours of flight time in it.

The original builder of the airplane reported that three pilots had flown the airplane prior to him selling it to a second owner. He reported that the three pilots did not indicate any discrepancies with the airplane.

At 1953, the surface weather observation at TDZ was: wind 090 degrees at 6 knots; visibility 10 miles; sky clear; temperature 29 degrees Celsius; dew point 17 degrees Celsius; altimeter 30.00 inches of mercury.

## History of Flight

Initial climb	Loss of control in flight (Defining event)
Emergency descent	Off-field or emergency landing
Landing	Hard landing

## Pilot Information

Certificate:	Private	Age:	52, Male
Airplane Rating(s):	Multi-engine Land; Single-engine Land; Single-engine Sea	Seat Occupied:	Center
Other Aircraft Rating(s):	None	Restraint Used:	Seatbelt, Shoulder harness
Instrument Rating(s):	None	Second Pilot Present:	No
Instructor Rating(s):	None	Toxicology Performed:	No
Medical Certification:	Class 3 With Waivers/Limitations	Last Medical Exam:	09/24/2010
Occupational Pilot:	No	Last Flight Review or Equivalent:	09/18/2010
Flight Time:	1353 hours (Total, all aircraft), 0 hours (Total, this make and model), 1112 hours (Pilot In Command, all aircraft)		

## Aircraft and Owner/Operator Information

Aircraft Manufacturer:	Couvillion	Registration:	N433GC
Model/Series:	S-17	Aircraft Category:	Airplane
Year of Manufacture:		Amateur Built:	Yes
Airworthiness Certificate:	Experimental	Serial Number:	0300011
Landing Gear Type:	Tailwheel	Seats:	1
Date/Type of Last Inspection:	Annual	Certified Max Gross Wt.:	
Time Since Last Inspection:		Engines:	1 Reciprocating
Airframe Total Time:	4.1 Hours	Engine Manufacturer:	ROTAX
ELT:	Not installed	Engine Model/Series:	503
Registered Owner:	Joseph Deaton	Rated Power:	
Operator:	Joseph Deaton	Air Carrier Operating Certificate:	None

## Meteorological Information and Flight Plan

Observation Facility, Elevation:	TDZ, 620 ft msl	Observation Time:	1953 EDT
Distance from Accident Site:	0 Nautical Miles	Condition of Light:	Day
Direction from Accident Site:	0°	Conditions at Accident Site:	Visual Conditions
Lowest Cloud Condition:		Temperature/Dew Point:	29° C / 17° C
Lowest Ceiling:	None	Visibility	10 Miles
Wind Speed/Gusts, Direction:	6 knots, 90°	Visibility (RVR):	
Altimeter Setting:	30 inches Hg	Visibility (RVV):	
Precipitation and Obscuration:	No Precipitation		
Departure Point:	Toledo, OH (TDZ)	Type of Flight Plan Filed:	None
Destination:	Toledo, OH (TDZ)	Type of Clearance:	None
Departure Time:	1830 EDT	Type of Airspace:	

## Airport Information

Airport:	Toledo Executive Airport (TDZ)	Runway Surface Type:	Asphalt
Airport Elevation:	620 ft	Runway Surface Condition:	Dry
Runway Used:	04	IFR Approach:	None
Runway Length/Width:	3799 ft / 75 ft	VFR Approach/Landing:	None

## 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		

## Administrative Information

Investigator In Charge (IIC):	James P Silliman	Adopted Date:	05/03/2012
Additional Participating Persons:	Kevin Abbuhl; FAA Cleveland FSDO; Cleveland, OH		
Publish Date:	05/03/2012		
Investigation Docket:	<a href="http://dms.nts.gov/pubdms/search/dockList.cfm?mKey=81014">http://dms.nts.gov/pubdms/search/dockList.cfm?mKey=81014</a>		

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