



National Transportation Safety Board Aviation Accident Final Report

Location:	Tidioute, PA	Accident Number:	ERA11LA300
Date & Time:	05/13/2011, 1632 EDT	Registration:	N433UB
Aircraft:	Carothers Zenith CH701	Aircraft Damage:	Substantial
Defining Event:	Loss of control in flight	Injuries:	2 Serious
Flight Conducted Under:	Part 91: General Aviation - Personal		

Analysis

The private pilot stated that he had been operating the experimental light sport airplane at a low altitude with a passenger. As he turned into the final approach to land at his private strip, the right wing collided with a tree. The airplane rolled right, he added power, the nose of the airplane pitched down, and the airplane collided with the ground and nosed over inverted. The pilot stated that he did not experience any mechanical problems with the airplane prior to the accident. Examination of the airframe, flight controls, engine assembly and accessories revealed no preaccident anomalies. Witnesses reported that the pilot had been flying low over the area prior to the accident. Additionally, prior to returning for landing at his private airstrip, the pilot had allowed the landing gear to contact the top of a tree at the witness's residence. Postaccident testing of a blood specimen, obtained from the pilot approximately 90 minutes following the accident, was positive for alcohol at 149 mg/dl (0.149 percent).

Probable Cause and Findings

The National Transportation Safety Board determines the probable cause(s) of this accident to be: The pilot's impairment due to alcohol and failure to maintain altitude on approach to landing, resulting in an in-flight collision with a tree.

Findings

Personnel issues	Alcohol - Pilot (Cause) Use of equip/system - Pilot Monitoring environment - Pilot (Cause)
Environmental issues	Tree(s) - Contributed to outcome

Factual Information

On May 13, 2011, at 1632 eastern daylight time, an experimental light sport, Carothers Zenith CH 701 airplane, N433UB, registered to a private owner, collided with a tree while landing at a private strip in the vicinity of Tidioute, Pennsylvania. The personal flight was operated under the provisions of 14 Code of Federal Regulations Part 91. No flight plan was filed and visual meteorological conditions prevailed. The private pilot and a passenger sustained serious injuries. The flight originated from the pilot's private strip at 1615.

The pilot stated he had been operating the airplane at a low altitude with a passenger. He turned on to final leg to land at his private strip and hit a tree with his right wing. The airplane rolled right, he added power, the nose of the airplane pitched down, he pulled back on the control stick, and the engine continued to run until the airplane collided with the ground in a nose down attitude and nosed over inverted. The pilot stated he did not experience any mechanical problems with the airplane, and that "the accident was caused by pilot error."

Witnesses, who live near the pilot's house, stated they had observed the airplane prior to the accident, flying low above the trees. One witness stated the pilot had circled their property and had allowed the wheels of the airplane to touch the top of the trees before he flew along a river and returned. They observed the airplane start a descent, flying east towards the pilot's house, and crossing a highway. The left wing of the airplane struck a tree and the airplane rolled to the left. The nose of the airplane pitched down, the engine continued to run, the airplane collided with the ground, and nosed over inverted.

The pilot, age 48, held a private pilot certificate issued on August 2, 2008, with a rating for airplane single-engine land. The pilot did not hold a Federal Aviation Administration (FAA) repairman certificate. The pilot's logbook was not located at the crash site. The pilot stated in an interview he had logged 150 total flight hours; of which, 2 hours were in the Zenith CH 701. The pilot had logged 63 hours of pilot-in-command. The pilot had flown 1 hour in the last 90 days and 1 hour in the last 30 days, all in the Zenith CH 701. The pilot was issued a third-class medical certificate on July 2, 2007, with no limitations. The pilot stated he was not under the influence of drugs or alcohol at the time of the accident.

Post accident hospital laboratory specimens from the pilot were obtained through a subpoena and forwarded to the FAA Bioaeronautical Research Science Laboratory (CAMI), Oklahoma City, Oklahoma, for toxicology screening. The specimens were not tested for carbon monoxide and cyanide. No drugs were detected in the blood. Ethanol, 133 (mg/dl, mg/hg) was detected in the serum and 128 (mg/dl, mg/hg) ethanol was detected in the blood. Testing conducted at the hospital at 1800 hours on the day of the accident indicated that the pilot's blood alcohol level was 149 mg/dl (0.149 percent).

The Zenith CH 701 is a two-place airplane with a tricycle landing gear, serial number 6695, built by the registered owner in 2011. A Volkswagen 2276, 100-horsepower engine powered the airplane. The registered owner stated the airplane did not have any logbooks, a current condition inspection, airworthiness certificate, or approved FAA operating limitations. According to the registered owner the engine had 100 total hours and the airframe had 2 hours at the time of the accident. The HOBBS meter at the accident site showed 2.1 hours.

Examination of the crash site revealed the nose section was bent upward 90- degrees. The engine cowling was damaged and remained in place. The propeller assembly remained

attached to the propeller crankshaft flange. The wooden propeller blades separated from the propeller hub. One propeller blade was located under the left side of the wreckage. The remaining propeller blade was fragmented and located about 20 feet to the right of the airplane. The engine assembly remained attached to the engine mounts and was displaced to the left. The nose landing gear remained attached to the airframe and was bent aft.

The windscreen was destroyed. The cabin area was compressed aft to about 5 feet aft of the cabin seats. The cabin seats remained intact and both seatbelts and shoulder harnesses were in use at the time of the accident. The instrument panel was distorted. The throttle was in the closed position. Continuity of the flight controls was confirmed to all flight control surfaces. The left and right main landing gear remained attached to the airframe.

The right wing remained attached to the tubular steel cabin area and was bent upward and pushed aft. The fixed leading edge slats were damaged. The full length flaperon assembly was not damaged. The wing struts remained attached to the wing and the fuselage.

The swept up rear fuselage, inverted stabilizer, and left and right elevator were not damaged. The all-flying rudder was damaged.

The left wing remained attached to the tubular steel cabin area and was bent upward and pushed aft. The fixed leading edge slats were damaged. The full length flaperon assembly was not damaged. The wing struts remained attached to the wing and the fuselage.

A visual examination of the engine assembly and associated components revealed no anomalies.

History of Flight

Approach	Collision with terr/obj (non-CFIT) Loss of control in flight (Defining event)
Uncontrolled descent	Collision with terr/obj (non-CFIT)

Pilot Information

Certificate:	Private	Age:	48, Male
Airplane Rating(s):	Single-engine Land	Seat Occupied:	Left
Other Aircraft Rating(s):	None	Restraint Used:	Seatbelt, Shoulder harness
Instrument Rating(s):	None	Second Pilot Present:	No
Instructor Rating(s):	None	Toxicology Performed:	Yes
Medical Certification:	Class 3 Without Waivers/Limitations	Last FAA Medical Exam:	07/02/2007
Occupational Pilot:	No	Last Flight Review or Equivalent:	
Flight Time:	150 hours (Total, all aircraft), 2 hours (Total, this make and model), 63 hours (Pilot In Command, all aircraft), 1 hours (Last 90 days, all aircraft), 1 hours (Last 30 days, all aircraft)		

Aircraft and Owner/Operator Information

Aircraft Make:	Carothers	Registration:	N433UB
Model/Series:	Zenith CH701	Aircraft Category:	Airplane
Year of Manufacture:		Amateur Built:	Yes
Airworthiness Certificate:	Experimental Light Sport	Serial Number:	6695
Landing Gear Type:	Tricycle	Seats:	2
Date/Type of Last Inspection:	Condition	Certified Max Gross Wt.:	1100 lbs
Time Since Last Inspection:		Engines:	1 Reciprocating
Airframe Total Time:	2 Hours at time of accident	Engine Manufacturer:	Volkswagen
ELT:	C91 installed, activated, did not aid in locating accident	Engine Model/Series:	2276
Registered Owner:	James R. Carothers Jr.	Rated Power:	100 hp
Operator:	James R. Carothers Jr.	Operating Certificate(s) Held:	None

Meteorological Information and Flight Plan

Conditions at Accident Site:	Visual Conditions	Condition of Light:	Day
Observation Facility, Elevation:	FKL, 1540 ft msl	Distance from Accident Site:	25 Nautical Miles
Observation Time:	1615 EDT	Direction from Accident Site:	45°
Lowest Cloud Condition:	Few / 4400 ft agl	Visibility	10 Miles
Lowest Ceiling:	Broken / 11000 ft agl	Visibility (RVR):	
Wind Speed/Gusts:	13 knots / 17 knots	Turbulence Type Forecast/Actual:	/
Wind Direction:	200°	Turbulence Severity Forecast/Actual:	/
Altimeter Setting:	29.73 inches Hg	Temperature/Dew Point:	23°C / 16°C
Precipitation and Obscuration:	No Obscuration; No Precipitation		
Departure Point:	Tidioute, PA	Type of Flight Plan Filed:	None
Destination:	Tidioute, PA	Type of Clearance:	None
Departure Time:	1615 EDT	Type of Airspace:	Class G

Airport Information

Airport:	Private	Runway Surface Type:	Dirt
Airport Elevation:	1425 ft	Runway Surface Condition:	Dry
Runway Used:	09	IFR Approach:	None
Runway Length/Width:	830 ft / 100 ft	VFR Approach/Landing:	Valley/Terrain Following

Wreckage and Impact Information

Crew Injuries:	1 Serious	Aircraft Damage:	Substantial
Passenger Injuries:	1 Serious	Aircraft Fire:	None
Ground Injuries:	N/A	Aircraft Explosion:	None
Total Injuries:	2 Serious	Latitude, Longitude:	41.663056, -79.403333 (est)

Administrative Information

Investigator In Charge (IIC):	Carrol A Smith	Report Date:	10/03/2011
Additional Participating Persons:	Ronald J Barone; FAA Allegheny FSDO; Pittsburg, PA		
Publish Date:	10/03/2011		
Investigation Docket:	http://dms.nts.gov/pubdms/search/dockList.cfm?mKey=79099		

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