



Aviation Investigation Final Report

Location:	Winfield, Kansas	Accident Number:	CEN11FA634
Date & Time:	September 7, 2011, 10:05 Local	Registration:	N554JR
Aircraft:	RIFFEL JERRIS L RV-7A	Aircraft Damage:	Substantial
Defining Event:	Miscellaneous/other	Injuries:	1 Fatal
Flight Conducted Under:	Part 91: General aviation - Personal		

Analysis

The private pilot was flying his experimental home-built airplane on a visual flight rules (VFR) cross-country flight. While en route, the pilot requested VFR flight following services from air traffic control. A review of radar data revealed that, at the time of the request, the airplane was level at 8,500 feet. About 6 minutes later, radar and radio contact were lost. No distress calls from the pilot were reported. A witness who was working near the accident site reported hearing a very loud revving engine noise. When he looked up, he saw the airplane flying upside down. He also stated that he did not see a cockpit or a pilot in the airplane. A few seconds later, the airplane passed behind a stand of trees and out of sight. He went to the impact site and found the wreckage but not the pilot.

First responders reported that the wreckage was mangled and spread across a soybean field in a southerly direction. Ground scars at the accident site indicated that the airplane impacted the ground at a high velocity in a wings-level, slightly nose-down attitude and inverted. The engine and propeller assembly exhibited evidence consistent with high power at impact. All of the flight control surfaces were accounted for at the main wreckage site. Flight control continuity was established from the cockpit to all of the flight control surfaces, and no evidence indicated that any of the flight controls were disconnected or otherwise separated before impact. The pilot's body was found about 1 mile northwest of the airplane wreckage. Canopy parts were found about 3/4 mile northwest of the wreckage, and various pieces of the acrylic canopy were found scattered for about 1/2 mile southward.

One of the canopy roller tracks was not found. The found roller track exhibited deformations about 8 inches aft of the forward ends on its left and right sides consistent with the attachment rollers being pulled from their tracks in an upward direction. The pilot and copilot lap seat belts were found attached to their respective anchor points with no evidence of overload failures or stresses on any of the latching blades or buckles consistent with the buckles not being latched at the time of impact.

The pilot's autopsy findings did not show any evidence of incapacitation, and toxicological tests were negative for drugs and alcohol. The on-scene evidence indicates that the airplane was likely controllable

and that the engine was producing power at the time of impact. Given the location of the pilot's body and the acrylic canopy parts and the witness's statement, it is likely that the pilot lost control of the airplane, which then inverted, and that the pilot subsequently fell through the open canopy. The reason for the pilot's loss of control of the airplane could not be determined.

Probable Cause and Findings

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

The pilot's in-flight loss of control. Contributing to the pilot's fatal injury was his failure to use the available restraint systems, which resulted in him falling through the open canopy when the airplane inverted.

Findings

Personnel issues	Lack of action - Pilot
Aircraft	(general) - Not attained/maintained
Personnel issues	Aircraft control - Pilot

Factual Information

History of Flight

Enroute	Miscellaneous/other (Defining event)
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On September 7, 2011, approximately 1005 Central Daylight Time, a RV-7A experimental amateur-built airplane, N554JR, owned and operated by a private individual, was substantially damaged when it impacted terrain near Winfield, Kansas. The pilot, the only person that was on board the airplane, was found fatally injured. The personal flight was being operated without a flight plan under the provisions of 14 Code of Federal Regulations Part 91. Visual meteorological conditions prevailed at the time of the accident.

A friend of the pilot reported that the flight had departed Justin, Texas, about 0830. The intention of the flight was to visit relatives in Kansas, then proceed to the Badlands Fly-in South Dakota. FAA Wichita (ICT) East Radar reported that the pilot checked in via radio for VFR flight following service at 0959. At the time of the radio call, the airplane was level at 8, 500 feet. About 1005, radar and radio contact was lost. There were no reported distress calls from the pilot.

Shortly after 1000, a person working near the accident site, heard a very loud revving engine noise. When he looked up, he saw the airplane heading to the south and downward toward the ground. He thought the airplane was flying smoothly, but the engine sounded wide open. As the airplane got closer, he saw that the airplane was flying upside down. He also stated that he did not see a cockpit or a pilot in the airplane. A few seconds later, the airplane passed behind a stand of trees and out of sight. He responded to where he thought the airplane went down and saw a cloud of dust and no smoke. Upon arriving where the airplane impacted, he found the wreckage, but there were no signs of occupants onboard. He then called 911.

First responders arrived at the accident site about 1011. They reported that the wreckage was mangled and spread across a soybean field in a generally southern direction. There was no evidence of occupants. A search ensued and some personal items were found scattered to the northwest of where the wreckage was located. At 1250, the body of the pilot was found about 1 mile to the northwest of the airplane wreckage. Further searching led to the discovery of canopy parts, about 3/4 miles northwest of the wreckage.

Pilot Information

Certificate:	Private	Age:	62
Airplane Rating(s):	Single-engine land	Seat Occupied:	Left
Other Aircraft Rating(s):	None	Restraint Used:	None
Instrument Rating(s):	Airplane	Second Pilot Present:	No
Instructor Rating(s):	None	Toxicology Performed:	Yes
Medical Certification:	Class 3 Without waivers/limitations	Last FAA Medical Exam:	February 3, 2011
Occupational Pilot:	No	Last Flight Review or Equivalent:	August 7, 2010
Flight Time:	(Estimated) 2328 hours (Total, all aircraft), 1000 hours (Total, this make and model)		

The pilot's personal records were not available, however, FAA records indicated that he held a valid Private Pilot's certificate and had about 2,328 flights hours as of his last airman's medical (3rd class) which was dated March 3, 2011. According to a friend, the pilot enjoyed flying his RV7A, flew it regularly, and that he was proficient and conscientious in his flying activities.

Aircraft and Owner/Operator Information

Aircraft Make:	RIFFEL JERRIS L	Registration:	N554JR
Model/Series:	RV-7A	Aircraft Category:	Airplane
Year of Manufacture:		Amateur Built:	Yes
Airworthiness Certificate:	Normal; Experimental (Special)	Serial Number:	01
Landing Gear Type:		Seats:	2
Date/Type of Last Inspection:	Condition	Certified Max Gross Wt.:	
Time Since Last Inspection:		Engines:	1 Reciprocating
Airframe Total Time:	1000 Hrs	Engine Manufacturer:	LYCOMING
ELT:	Installed, not activated	Engine Model/Series:	IO-360-B1B
Registered Owner:	RIFFEL JERRIS L	Rated Power:	180 Horsepower
Operator:	RIFFEL JERRIS L	Operating Certificate(s) Held:	None

The airplane records were not available, however, FAA airworthiness records indicated that the total time on the 2008 model RV7A was about 1,000 hours. It is estimated that the pilot had at least 1,000 hours in the RV7 since he owned it from the time he built the airplane. A friend with whom the pilot shared hangar space, reported that the airplane was well maintained and in very good condition.

Meteorological Information and Flight Plan

Conditions at Accident Site:	Visual (VMC)	Condition of Light:	Day
Observation Facility, Elevation:	KWLD, 1160 ft msl	Distance from Accident Site:	6 Nautical Miles
Observation Time:	09:54 Local	Direction from Accident Site:	10°
Lowest Cloud Condition:	Clear	Visibility	10 miles
Lowest Ceiling:	None	Visibility (RVR):	
Wind Speed/Gusts:	/	Turbulence Type Forecast/Actual:	/
Wind Direction:		Turbulence Severity Forecast/Actual:	/
Altimeter Setting:	30.28 inches Hg	Temperature/Dew Point:	23°C / 7°C
Precipitation and Obscuration:			
Departure Point:	Justin, TX (3T6)	Type of Flight Plan Filed:	None
Destination:	Badlands, SD (SPF)	Type of Clearance:	VFR flight following
Departure Time:		Type of Airspace:	

The nearest weather reporting station to the accident area, Strother Field Airport (WLD) was located about 6 miles to the north of the accident site. WLD reported clear skies and calm wind at 0954 local time. Additionally, there was no convective activity in the vicinity where radar contact was lost or along the presumed route of flight.

Wreckage and Impact Information

Crew Injuries:	1 Fatal	Aircraft Damage:	Substantial
Passenger Injuries:		Aircraft Fire:	None
Ground Injuries:	N/A	Aircraft Explosion:	None
Total Injuries:	1 Fatal	Latitude, Longitude:	37.259353, -96.960632(est)

The main wreckage of the airplane came to rest in a soybean field adjacent to a wind row of medium sized trees. Coordinates, North 37 degrees 23.524 minutes and West 096 degrees 57.045 minutes. The pilot's body was found about 1 mile northwest of the main wreckage at coordinates, North 37 degrees 23.350 minutes and West 096 degrees 57.228 minutes. The canopy frame of the airplane was found about 3/4 miles northwest of the main wreckage at coordinates, North 37 degrees 24.105 minutes and West 096 degrees and 57.270 minutes. Various pieces of the acrylic canopy were found scattered for 1/2 mile southward toward the main wreckage.

Initial observations at the accident site showed ground scars about 100-150 feet northwest of the main wreckage. The scars indicated that the airplane impacted the ground at a high velocity in a wings level and slightly nose down attitude, inverted. The general debris path was oriented southwest. Along the debris path all wing sections, stabilizers, and flight control surfaces were identified. The cabin section was crushed and inverted with the left wing mostly intact, including the left flap and left aileron. The right wing was mangled and distorted from impact forces and most of the right wing spar was still attached to the fuselage with the outboard section bowed forward in a slight arc. A large section of the right wing body with right flap attached was found about 30 feet west of the main wreckage. Both wingtips were identified within the debris path.

The empennage was twisted upward perpendicular to the fuselage. The left horizontal stabilizer was intact with the left elevator trim tab. The lower 1/3 of the rudder was attached to the empennage and connected to the aft end of the rudder control cables. The upper 2/3 of the rudder was found about 30 feet south of the initial impact point. The right horizontal stabilizer was attached and bent backward at the spar about 90 degrees with damage present on its leading edge. The damaged area on the leading edge contained smeared material consistent with the appearance of acrylic plastic. The right elevator was found separated from the stabilizer and located about 30 feet west of the main wreckage.

The engine was found within the main wreckage with the right main cylinder head broken away from the body of the engine. The propeller assembly was found about 50 feet east of the main wreckage with both blades exhibiting severe twisting and bending consistent with high power at impact. The engine crankshaft propeller flange was still attached to the propeller with torsional overload failures just behind the flange.

Flight control continuity was established from the cockpit to all flight controls surfaces. All of the separations of the flight control cables, torque tubes and bellcranks were inspected in detail. There was no evidence to indicate any of the flight controls were disconnected or otherwise separated prior to impact. All engine controls did not exhibit any anomalies other than impact force damage.

The left side of the canopy roller track was still attached to the fuselage within the main wreckage. The right side of the roller track was found separated from the fuselage due to impact forces. One of the canopy attachment brackets, with roller present, was found laying next to the right roller track. The second canopy roller track was not found. Both left and right side roller tracks exhibited deformations approximately 8 inches aft of the forward end, consistent with the rollers being pulled from the track in an upward direction. The canopy to airframe locking mechanisms were not deformed.

The cockpit was configured with a dual side-by-side seating configuration. The pilot and copilot lap seat belts were observed attached to their respective anchor points with no evidence of overload failures or stresses on any of the latching blades or buckles. The lack of damage was consistent with the buckles not being latched at the time of impact.

Medical and Pathological Information

An autopsy was performed on the pilot with blunt force trauma noted as the cause of death. No preexisting medical conditions were reported on the autopsy.

Toxicological tests done on the pilot were negative for alcohol. A small amount of Doxylamine was detected in the urine sample. Doxylamine is a common first generation antihistamine and can be found in over-the-counter medications used as a short term sedative, and in combination with other drugs, provides night time allergy and cold relief.

A friend of the pilot who spoke to him a few days prior to the accident stated that the pilot appeared to be in good health.

Additional Information

The wreckage was released to the owner's representative.

Administrative Information

Investigator In Charge (IIC): Lemishko, Alexander

Additional Participating Persons:

Original Publish Date: September 15, 2014

Last Revision Date:

Investigation Class: [Class](#)

Note: The NTSB traveled to the scene of this accident.

Investigation Docket: <https://data.ntsb.gov/Docket?ProjectID=81758>

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