Aviation Investigation Final Report

Location:	Oshkosh, Wisconsin	**Accident Number:**	CEN14FA396
Date & Time:	July 30, 2014, 15:00 Local	**Registration:**	N82PR
Aircraft:	RENDER RV 9A	**Aircraft Damage:**	Substantial
Defining Event:	Loss of control in flight	**Injuries:**	2 Serious
Flight Conducted Under:	Part 91: General aviation - Personal		

Analysis

The pilot was landing the airplane at a privately-owned airport. He elected to land to the south on a turf runway that the wind favored. He turned onto left base and then to an "abbreviated final" to avoid airspace over a prison and power lines located north of the runway. The pilot said that the airplane was descending at the "usual rate," but the controls subsequently "got mushy." The airplane impacted terrain at the approach end of the runway. The pilot indicated in his accident report that there were no mechanical malfunctions in reference to the accident flight. No mechanical anomalies were detected during an on-scene investigation, and witness marks were consistent with the engine producing power at impact. The runway the pilot selected was not published in the Federal Aviation Administration's airport master record at the time of the accident, and, therefore, no obstructions were listed for this runway in the airport master record.

The pilot's safety recommendation stated, in part, "the close location of the prison and the power lines on the north end of the airstrip forces pilots to make a short final but still stay high to avoid power lines. Maybe I should have landed to the north, even with a tailwind." The pilot most likely did not establish a stabilized approach and did not maintain the airplane's airspeed during the "abbreviated final" approach south of the prison and above the power lines, which resulted in a stall/mush.

Probable Cause and Findings

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

The pilot's failure to establish a stabilized approach and to maintain airspeed during final approach over obstacles resulting in a stall/mush.

Findings

Aircraft	Airspeed - Not attained/maintained
Personnel issues	Aircraft control - Pilot
Environmental issues	(general) - Contributed to outcome

Factual Information

History of Flight

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

On July 30, 2014, about 1500 central daylight time, an experimental amateur-built Render RV 9A airplane, N82PR, impacted terrain near the approach end of a runway at the Gallinger Airport (51WI), near Oshkosh, Wisconsin. The private pilot and passenger were seriously injured. The airplane sustained substantial damage. The airplane was registered to and operated by the pilot under the provisions of 14 Code of Federal Regulations Part 91 as a personal flight. Day visual flight rules conditions prevailed for the flight, which did not operate on a flight plan. The flight originated from the Albertus Airport (FEP), near Freeport, Illinois, about 1400.

According to the pilot's accident report, he departed about 0830 from Bowling Green, Kentucky, and flew to West Plaines, Missouri, where he refueled the airplane and picked up a passenger. He flew the airplane to Freeport, Illinois, and refueled the airplane there. A copy of fuel receipts from the fixed base operator at FEP showed the airplane was serviced with 22.1 gallons of 100 low lead aviation gasoline about 1342 on July 30, 2014. He then flew the airplane to 51WI. The pilot reported that the winds favored "runway 18" at 51WI. He entered a left downwind leg for the runway. He turned left base and then an "abbreviated final" to avoid airspace over a prison located north of the runway. The pilot added that the airplane was descending at the "usual rate" and the controls subsequently "got mushy." The airplane impacted terrain at the approach end of the runway. He indicated that he woke up when first responders arrived and did not remember the impact.

Pilot Information

Certificate:	Private	**Age:**	63
Airplane Rating(s):	Single-engine land	**Seat Occupied:**	Left
Other Aircraft Rating(s):	None	**Restraint Used:**	3-point
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:**	June 3, 2014
Occupational Pilot:	No	**Last Flight Review or Equivalent:**	December 31, 2013
Flight Time:	503 hours (Total, all aircraft), 428 hours (Total, this make and model), 438 hours (Pilot In Command, all aircraft), 14 hours (Last 90 days, all aircraft), 7 hours (Last 30 days, all aircraft)		

The pilot held a Federal Aviation Administration (FAA) private pilot certificate with airplane single-engine land rating. FAA records showed that the pilot held a third-class medical certificate with a limitation for corrective lenses. The pilot reported that he had accumulated

503 hours of total flight time and 428 hours of flight time in the same make and model as the accident airplane. He stated that he had accumulated 14 hours of flight time in the 90 days prior to the accident and 7 hours of flight time in 30 days prior to the accident.

Aircraft and Owner/Operator Information

Aircraft Make:	RENDER	**Registration:**	N82PR
Model/Series:	RV 9A	**Aircraft Category:**	Airplane
Year of Manufacture:	2003	**Amateur Built:**	Yes
Airworthiness Certificate:	Experimental (Special)	**Serial Number:**	487
Landing Gear Type:	Tricycle	**Seats:**	2
Date/Type of Last Inspection:	June 16, 2014 Condition	**Certified Max Gross Wt.:**	1750 lbs
Time Since Last Inspection:		**Engines:**	1 Reciprocating
Airframe Total Time:	595 Hrs at time of accident	**Engine Manufacturer:**	Lycoming
ELT:	C91A installed, activated, did not aid in locating accident	**Engine Model/Series:**	O-320-E2D
Registered Owner:	Pilot	**Rated Power:**	150 Horsepower
Operator:	Pilot	**Operating Certificate(s) Held:**	None

N82PR was an experimental amateur-built Render RV 9A single engine, two-seat, low-wing, kit airplane with serial number 487. The airplane was powered by a 150-horsepower, Lycoming O-320-E2D engine with serial number L-20024-27A. A special airworthiness certificate was issued for the airplane on July 23, 2003. A condition inspection on the airplane was completed on June 16, 2014. The pilot reported that the airplane had accumulated 595 hours of total flight time at the time of the accident. He further indicated in his accident report that there were no mechanical malfunctions in reference to the accident flight.

Meteorological Information and Flight Plan

Conditions at Accident Site:	Visual (VMC)	**Condition of Light:**	Day
Observation Facility, Elevation:	KOSH,839 ft msl	**Distance from Accident Site:**	5 Nautical Miles
Observation Time:	15:13 Local	**Direction from Accident Site:**	180°
Lowest Cloud Condition:	Clear	**Visibility**	10 miles
Lowest Ceiling:	None	**Visibility (RVR):**	
Wind Speed/Gusts:	6 knots /	**Turbulence Type Forecast/Actual:**	/
Wind Direction:		**Turbulence Severity Forecast/Actual:**	/
Altimeter Setting:	30.02 inches Hg	**Temperature/Dew Point:**	23°C / 11°C
Precipitation and Obscuration:	No Obscuration; No Precipitation		
Departure Point:	FREEPORT, IL (FEP)	**Type of Flight Plan Filed:**	None
Destination:	OSHKOSH, WI (51WI)	**Type of Clearance:**	VFR
Departure Time:	14:00 Local	**Type of Airspace:**	

At 1513, the recorded weather about five miles and 180 degrees from the accident site at the Wittman Regional Airport, near Oshkosh, Wisconsin, was: Wind variable at 6 knots; visibility 10 statute miles; sky condition clear; temperature 23 degrees C; dew point 11 degrees C; altimeter 30.02 inches of mercury.

Airport Information

Airport:	GALLINGER 51WI	**Runway Surface Type:**	Grass/turf
Airport Elevation:	800 ft msl	**Runway Surface Condition:**	Dry
Runway Used:	18	**IFR Approach:**	None
Runway Length/Width:	2200 ft / 75 ft	**VFR Approach/Landing:**	Full stop

The 51WI airport was a privately owned, non-towered airport located about two miles north of the city of Oshkosh, Wisconsin, at an elevation of 800 feet. According to the airport's master record, its published runway 9/27 was listed as a 1,200 foot by 100 foot turf runway.

A north/south orientated runway was present at the accident site, which was not published in the airport's master record at the time of the accident. The threshold of the approach end of the southbound runway was about 350 feet south of powerlines that ran perpendicular to the runway. The threshold was about 775 feet south of a prison's perimeter and its prison guard tower.

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:**	44.066944,-88.557777(est)

A ground scar near the approach end of a southbound runway at 51WI was about 13 feet long and the scar ended by a depression consistent with an impact from a propeller. The dirt in the depression had a paint transfer consistent with the color of the propeller's back surface. The airplane and its right wing came to rest about 80 feet south of the depression. The heading from the depression to the airplane's nose landing gear (nlg) was about 200 degrees magnetic. The airplane fragmented along this heading and debris was found along this path. A section of the left wing tip was found about 73 feet north of the nlg and the left wing tip's navigation light was found about 69 feet north of the nlg. Sections of clear plastic and the left aileron were found about 61 feet north of the nlg. The left wing was found separated from its fuselage about 45 feet north of the nlg.

The two-bladed fixed pitch propeller remained attached to the engine. One propeller blade exhibited chordwise abrasion, s-shaped bending, and leading edge gouges. The outboard third of the other propeller blade was bent forward and it exhibited chordwise abrasion. Throttle, carburetor heat, and mixture controls were found in their forward positions. The engine controls were moved by hand in the cockpit and continuity was established when their other ends were observed to move correspondingly. The control stick was manipulated by hand and the right aileron and elevators were observed to move accordingly. The rudder pedals were manipulated by hand and the rudder moved accordingly. The left wing's push-pull tube separated from its end, near the fuselage's wing root. The section of the push-pull tube within the fuselage moved in correct sequence to the control stick's movement and all push-pull tube separations were consistent with overload. Engine and airplane control continuity was established. A liquid consistent with the color and smell of aviation gasoline was observed in the right fuel tank.

Additional Information

The FAA Airplane Flying Handbook, in part, stated:

The base leg is the transitional part of the traffic pattern between the downwind leg and the final approach leg. Depending on the wind condition, it is established at a sufficient distance from the approach end of the landing runway to permit a gradual descent to the intended touchdown point. ...

The final approach leg is a descending flightpath starting from the completion of the base-to-final turn and extending to the point of touchdown. This is probably the most important leg of the entire pattern, because here the pilot's judgment and procedures must be the sharpest to accurately control the airspeed and descent angle while approaching the intended touchdown point.

The pilot's safety recommendation, in part, stated:

The close location of the prison and the power lines on the north end of the airstrip forces pilots to make a short final but still stay high to avoid power lines. Maybe I should have landed to the north, even with a tailwind.

Administrative Information

Investigator In Charge (IIC):	Malinowski, Edward
Additional Participating Persons:	Ray P Yank; Federal Aviation Administration; Milwaukee, WI
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Note:	
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