



AVIATION



HIGHWAY



MARINE



RAILROAD



PIPELINE

# Aviation Investigation Final Report

<b>Location:</b>	Canandaigua, New York	<b>Accident Number:</b>	IAD05LA072
<b>Date &amp; Time:</b>	June 5, 2005, 08:00 Local	<b>Registration:</b>	N61TW
<b>Aircraft:</b>	Weiss Vans RV-8	<b>Aircraft Damage:</b>	Substantial
<b>Defining Event:</b>		<b>Injuries:</b>	1 Serious, 1 None
<b>Flight Conducted Under:</b>	Part 91: General aviation - Personal		

## Analysis

The pilot/owner of the homebuilt airplane began the takeoff roll. At rotation, the airplane pulled "hard" to the left, and pitched up "more aggressively" than a standard takeoff. The pilot applied full down elevator, "but the nose would not come down." The airplane then pitched nose down, the pilot applied full up elevator, and the airplane attained a level pitch attitude prior to ground contact. When asked about the performance and handling of the airplane, the pilot/owner said, "Everything was perfect with the engine." He added that about the time of rotation, he felt a bump, and surmised that he had struck a runway light or that a wheel brake had locked. Examination of the airplane revealed an ink pen lodged beneath the rudder bar. As a result, more force was required for a right rudder input than a left rudder input. The pilot/owner said he routinely stored pens, unsecured, on the ledge next to his right knee. Further examination revealed a 50-ounce glass jar beneath the front seat, in close proximity to the forward control stick. The jar's lid displayed indentations that the pilot said had not been there prior to the accident. He said the jar was kept in the airplane as a relief container, and that it was placed on a ledge, unsecured, prior to takeoff.

## Probable Cause and Findings

The National Transportation Safety Board determines the probable cause(s) of this accident to be: Partial blocking of the flight controls by unsecured items in the cockpit, which resulted in a loss of control during takeoff.

## Findings

Occurrence #1: LOSS OF CONTROL - IN FLIGHT

Phase of Operation: TAKEOFF

Findings

1. (C) FLIGHT CONTROL SYSTEM - BLOCKED(PARTIAL)

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Occurrence #2: IN FLIGHT COLLISION WITH TERRAIN/WATER

Phase of Operation: DESCENT - UNCONTROLLED

Findings

2. TERRAIN CONDITION - GROUND

## Factual Information

On June 5, 2005, at 0800 eastern daylight time, a homebuilt Rans RV-8, N61TW, was substantially damaged during collision with terrain following an uncontrolled descent after takeoff from the Canandaigua Airport, Canandaigua, New York. The certificated private pilot/owner was seriously injured and the passenger was not injured. Visual meteorological conditions prevailed for the personal flight, which was destined for the Oswego County Airport, Oswego, New York. No flight plan was filed for the flight conducted under 14 CFR Part 91.

A Federal Aviation Administration (FAA) aviation safety inspector interviewed both occupants, a witness, and examined the airplane at the scene.

The purpose of the flight was to travel to the Oswego County Airport for a fly-in breakfast. This was the first flight where the pilot/owner had carried a passenger.

The pilot performed the preflight inspection and run-up checks with no anomalies noted. Prior to takeoff, he set the flaps at zero degrees, and the elevator trim at "neutral." He advanced the throttle slowly for takeoff, and reached the full-throttle position just prior to attaining his selected rotation speed of 60 knots.

At rotation, the airplane pulled "hard" to the left, and pitched up "more aggressively" than a standard takeoff. The pilot applied full down elevator, "but the nose would not come down." The airplane then pitched nose down, the pilot applied full up elevator, and the airplane attained a level pitch attitude prior to ground contact.

When asked about the performance and handling of the airplane, the pilot/owner said, "Everything was perfect with the engine." He added that about the time of rotation, he felt a bump, and surmised that he had struck a runway light or that a wheel brake had locked.

In a written statement, the passenger said that approximately 50 feet above the ground, the airplane "was unable to maintain lift," turned to the left, and struck the ground at full power.

The witness stated that he had watched and listened to the tail-wheeled airplane takeoff from the runway on many previous occasions. He said the engine sound was strong and continuous, and that the airplane sounded as it always had.

The witness added that the airplane rotated from the "three-point" position. He explained that normally the tail wheel was raised, and the airplane rotated from the main gear. After liftoff from all three landing gear, the airplane climbed at a much steeper angle than was customary. The airplane slowed in the steep climb about 60 to 75 feet above the ground, and pitched down and to its left. The witness then turned and ran to his automobile to render assistance. He did

not witness the airplane as it contacted the ground.

The airplane was a homebuilt Vans RV-8 that was built by the pilot/owner. The airworthiness certificate was issued June 10, 2004. The airplane had accrued 71 total hours of flight time, and the pilot/owner was the only pilot to fly the airplane.

The airplane was examined at the site by the FAA inspector, and all major components were accounted for at the scene. Both propeller blades exhibited significant twisting, bending, leading edge gouging, and chordwise scratching. Control continuity was established from the flight controls to all flight control surfaces. The elevator trim was measured across a 10-notch range, and was found two notches past neutral in the "nose-up" direction. Electrical power was applied to the airplane, and the elevator trim was actuated through its full range with no binding noted.

A subsequent examination revealed an ink pen lodged beneath the rudder bar. As a result, more force was required for a right rudder input than a left rudder input. The pilot owner said he routinely stored pens, unsecured, on the ledge next to his right knee.

Further examination revealed a 50-ounce glass jar beneath the front seat, in close proximity to the forward control stick. The jar's lid displayed indentations that the pilot said had not been there prior to the accident. He said the jar was kept in the airplane as a relief container, and that it was placed on a ledge, unsecured, prior to takeoff. In a subsequent written statement, the pilot suggested, "The glass jar probably lodged in the [pedal] mechanism leaving me unable to steer for directional control."

The pilot held a private pilot certificate with ratings for airplane single engine land and single engine sea. His most recent FAA third class medical certificate was issued June 3, 2004, and he reported 1,318 hours of total flight experience on that date.

The weather reported at Penn Yan Airport, Pen Yan, New York, 20 miles southeast of Canandaigua Airport included clear skies with 5 miles of visibility in haze. The wind was from 210 degrees at 5 knots.

## Pilot Information

<b>Certificate:</b>	Private	<b>Age:</b>	65, Male
<b>Airplane Rating(s):</b>	Single-engine land	<b>Seat Occupied:</b>	Front
<b>Other Aircraft Rating(s):</b>	None	<b>Restraint Used:</b>	
<b>Instrument Rating(s):</b>	None	<b>Second Pilot Present:</b>	No
<b>Instructor Rating(s):</b>	None	<b>Toxicology Performed:</b>	No
<b>Medical Certification:</b>	Class 3 With waivers/limitations	<b>Last FAA Medical Exam:</b>	June 1, 2004
<b>Occupational Pilot:</b>	No	<b>Last Flight Review or Equivalent:</b>	April 1, 2005
<b>Flight Time:</b>	1420 hours (Total, all aircraft), 71 hours (Total, this make and model)		

## Aircraft and Owner/Operator Information

<b>Aircraft Make:</b>	Weiss	<b>Registration:</b>	N61TW
<b>Model/Series:</b>	Vans RV-8	<b>Aircraft Category:</b>	Airplane
<b>Year of Manufacture:</b>		<b>Amateur Built:</b>	Yes
<b>Airworthiness Certificate:</b>	Experimental (Special)	<b>Serial Number:</b>	80428
<b>Landing Gear Type:</b>	Tailwheel	<b>Seats:</b>	2
<b>Date/Type of Last Inspection:</b>	October 1, 1999 Annual	<b>Certified Max Gross Wt.:</b>	1800 lbs
<b>Time Since Last Inspection:</b>	71 Hrs	<b>Engines:</b>	1 Reciprocating
<b>Airframe Total Time:</b>	71 Hrs at time of accident	<b>Engine Manufacturer:</b>	Lycoming
<b>ELT:</b>	Installed, activated, did not aid in locating accident	<b>Engine Model/Series:</b>	IO-360-C1C6
<b>Registered Owner:</b>	Theodore T. Weiss	<b>Rated Power:</b>	200 Horsepower
<b>Operator:</b>		<b>Operating Certificate(s) Held:</b>	None

## Meteorological Information and Flight Plan

<b>Conditions at Accident Site:</b>	Visual (VMC)	<b>Condition of Light:</b>	Day
<b>Observation Facility, Elevation:</b>	KPEO, 990 ft msl	<b>Distance from Accident Site:</b>	
<b>Observation Time:</b>	07:54 Local	<b>Direction from Accident Site:</b>	
<b>Lowest Cloud Condition:</b>	Clear	<b>Visibility</b>	5 miles
<b>Lowest Ceiling:</b>	None	<b>Visibility (RVR):</b>	
<b>Wind Speed/Gusts:</b>	5 knots / None	<b>Turbulence Type Forecast/Actual:</b>	/
<b>Wind Direction:</b>	210°	<b>Turbulence Severity Forecast/Actual:</b>	/
<b>Altimeter Setting:</b>	30.01 inches Hg	<b>Temperature/Dew Point:</b>	19°C / 16°C
<b>Precipitation and Obscuration:</b>	N/A - None - Haze		
<b>Departure Point:</b>	Canandaigua, NY (D38 )	<b>Type of Flight Plan Filed:</b>	None
<b>Destination:</b>	(D38 )	<b>Type of Clearance:</b>	None
<b>Departure Time:</b>	08:00 Local	<b>Type of Airspace:</b>	

## Airport Information

<b>Airport:</b>	Canandaigua D38	<b>Runway Surface Type:</b>	Asphalt
<b>Airport Elevation:</b>	814 ft msl	<b>Runway Surface Condition:</b>	Dry
<b>Runway Used:</b>	31	<b>IFR Approach:</b>	None
<b>Runway Length/Width:</b>	3200 ft / 75 ft	<b>VFR Approach/Landing:</b>	None

## Wreckage and Impact Information

<b>Crew Injuries:</b>	1 Serious	<b>Aircraft Damage:</b>	Substantial
<b>Passenger Injuries:</b>	1 None	<b>Aircraft Fire:</b>	None
<b>Ground Injuries:</b>	N/A	<b>Aircraft Explosion:</b>	None
<b>Total Injuries:</b>	1 Serious, 1 None	<b>Latitude, Longitude:</b>	42.906944,-77.321388

## Administrative Information

Investigator In Charge (IIC):	Rayner, Brian
Additional Participating Persons:	Guido Hassig; FAA/FSDO; Rochester, NY
Original Publish Date:	April 25, 2006
Last Revision Date:	
Investigation Class:	<a href="#">Class</a>
Note:	
Investigation Docket:	<a href="https://data.nts.gov/Docket?ProjectID=61628">https://data.nts.gov/Docket?ProjectID=61628</a>

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