



# Aviation Investigation Final Report

<b>Location:</b>	New Cumberland, Pennsylvania	<b>Accident Number:</b>	IAD05LA147
<b>Date &amp; Time:</b>	September 4, 2005, 17:54 Local	<b>Registration:</b>	N220EZ
<b>Aircraft:</b>	Hanson VariEze	<b>Aircraft Damage:</b>	Substantial
<b>Defining Event:</b>		<b>Injuries:</b>	1 Minor
<b>Flight Conducted Under:</b>	Part 91: General aviation - Personal		

## Analysis

The airplane had been airborne for about 5 minutes when the engine lost power. The pilot then force landed in a field, and the airplane nosed over. During a post-accident examination, the propeller was replaced, and the engine was started and operated for about 5 minutes at 1,700 rpm. The fuel system was also examined, and the fuel screens in both fuel tanks were found to be covered in a "fine muddy silt," consistent with mud dauber activity. A subsequent fuel analysis revealed that particulate contamination and gum levels were "very high." The fuel tanks had been open during the airplane's construction, and the airplane had about 30 hours of operation at the time of the accident.

## Probable Cause and Findings

The National Transportation Safety Board determines the probable cause(s) of this accident to be: The owner/builder's inadequate fuel tank inspection during construction, which resulted in fuel contamination and subsequent fuel starvation to the engine.

### Findings

Occurrence #1: LOSS OF ENGINE POWER(TOTAL) - NONMECHANICAL  
Phase of Operation: CRUISE

#### Findings

1. FLUID,FUEL - CONTAMINATION,OTHER THAN WATER
2. (C) MAINTENANCE,INSPECTION - INADEQUATE - OWNER/BUILDER

3. FUEL SYSTEM, SCREEN - BLOCKED (TOTAL)

4. FLUID, FUEL - STARVATION

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Occurrence #2: FORCED LANDING

Phase of Operation: DESCENT - EMERGENCY

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Occurrence #3: ON GROUND/WATER ENCOUNTER WITH TERRAIN/WATER

Phase of Operation: EMERGENCY LANDING

Findings

5. TERRAIN CONDITION - GROUND

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Occurrence #4: NOSE OVER

Phase of Operation: EMERGENCY LANDING

## Factual Information

On September 4, 2005, at 1754 eastern daylight time, a homebuilt VariEze, N220EZ, was substantially damaged during a forced landing near New Cumberland, Pennsylvania. The certificated private pilot incurred minor injuries. Visual meteorological conditions prevailed, and no flight plan had been filed for the local flight, which originated at Capital City Airport (CXY), New Cumberland, Pennsylvania. The personal flight was conducted under 14 CFR Part 91.

According to a Federal Aviation Administration (FAA) inspector, the airplane had been airborne about 5 minutes when the engine lost power. The pilot then force landed in a field, and the airplane nosed over.

During a post-accident examination of the airplane, the propeller was replaced, and the engine was started and operated for about 5 minutes at 1,700 rpm. The fuel system was also examined, and the fuel screens in both fuel tanks were found to be covered in a "fine muddy silt."

A subsequent fuel analysis revealed that "particulate contamination and gum levels [were] very high."

The fuel tanks had been open during the airplane's construction, and the airplane had about 30 hours of operation at the time of the accident.

The pilot held a private pilot certificate. On his latest application for an FAA third class medical certificate, dated May 1, 2003, he reported 70 hours of flight time.

Despite multiple requests and a verbal assurance that he would do so, the pilot did not return a NTSB Form 6120.1, as required per 49 CFR 831, which may have provided additional information regarding this event.

## Pilot Information

<b>Certificate:</b>	Private	<b>Age:</b>	57, 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	<b>Last FAA Medical Exam:</b>	May 1, 2003
<b>Occupational Pilot:</b>	No	<b>Last Flight Review or Equivalent:</b>	
<b>Flight Time:</b>	70 hours (Total, all aircraft)		

## Aircraft and Owner/Operator Information

<b>Aircraft Make:</b>	Hanson	<b>Registration:</b>	N220EZ
<b>Model/Series:</b>	VariEze	<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>	32050
<b>Landing Gear Type:</b>	Retractable - Tricycle	<b>Seats:</b>	2
<b>Date/Type of Last Inspection:</b>	May 1, 2005 Condition	<b>Certified Max Gross Wt.:</b>	2050 lbs
<b>Time Since Last Inspection:</b>	30 Hrs	<b>Engines:</b>	1 Reciprocating
<b>Airframe Total Time:</b>	30 Hrs	<b>Engine Manufacturer:</b>	Continental
<b>ELT:</b>	Installed, not activated	<b>Engine Model/Series:</b>	O-200
<b>Registered Owner:</b>	David Hanson	<b>Rated Power:</b>	100 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>	CXY,347 ft msl	<b>Distance from Accident Site:</b>	3 Nautical Miles
<b>Observation Time:</b>	17:56 Local	<b>Direction from Accident Site:</b>	360°
<b>Lowest Cloud Condition:</b>	Few / 6000 ft AGL	<b>Visibility</b>	10 miles
<b>Lowest Ceiling:</b>	None	<b>Visibility (RVR):</b>	
<b>Wind Speed/Gusts:</b>	8 knots /	<b>Turbulence Type Forecast/Actual:</b>	/
<b>Wind Direction:</b>	350°	<b>Turbulence Severity Forecast/Actual:</b>	/
<b>Altimeter Setting:</b>	30.2 inches Hg	<b>Temperature/Dew Point:</b>	26°C / 12°C
<b>Precipitation and Obscuration:</b>	No Obscuration; No Precipitation		
<b>Departure Point:</b>	New Cumberland, PA (CXY )	<b>Type of Flight Plan Filed:</b>	None
<b>Destination:</b>		<b>Type of Clearance:</b>	None
<b>Departure Time:</b>		<b>Type of Airspace:</b>	

## Wreckage and Impact Information

<b>Crew Injuries:</b>	1 Minor	<b>Aircraft Damage:</b>	Substantial
<b>Passenger Injuries:</b>		<b>Aircraft Fire:</b>	None
<b>Ground Injuries:</b>	N/A	<b>Aircraft Explosion:</b>	None
<b>Total Injuries:</b>	1 Minor	<b>Latitude, Longitude:</b>	40.216667,-76.849998

## Administrative Information

<b>Investigator In Charge (IIC):</b>	Cox, Paul
<b>Additional Participating Persons:</b>	Frank Gurish; FAA/FSDO; Harrisburg, PA
<b>Original Publish Date:</b>	May 30, 2006
<b>Last Revision Date:</b>	
<b>Investigation Class:</b>	<a href="#">Class</a>
<b>Note:</b>	
<b>Investigation Docket:</b>	<a href="https://data.ntsb.gov/Docket?ProjectID=62394">https://data.ntsb.gov/Docket?ProjectID=62394</a>

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