



Aviation Investigation Final Report

Location:	Chesapeake, Virginia	Accident Number:	NYC08LA001
Date & Time:	October 3, 2007, 18:18 Local	Registration:	N8VE
Aircraft:	Lambert John G Varieze	Aircraft Damage:	Destroyed
Defining Event:		Injuries:	1 Fatal
Flight Conducted Under:	Part 91: General aviation - Personal		

Analysis

The pilot/owner's girlfriend stated that the purpose of the flight was to test the speed brake installed in the amateur-built airplane. She quoted the pilot as saying that during the first hour he owned the airplane, he tried the speed brake and it really scared him. He had since accumulated 70 total hours in the airplane and was going to try the speed brake again. Witnesses described watching the accident airplane taxi from its hangar and then listening to the pilot announce the takeoff, crosswind, and downwind legs of the traffic pattern over the Unicom frequency. Seconds later, the witnesses heard a voice transmit cries for help. Other witnesses were traveling southbound along a divided highway, adjacent to the airport, in their car. They noticed the airplane flying erratically, at low altitude, as it paralleled their course on the west side of the highway. The airplane then crossed the roadway in front of their vehicle at low altitude, and circled back towards them before striking the ground on the east side of the roadway, scattering debris across all four lanes in a westerly direction. The witnesses' vehicle drove through and over wreckage as their vehicle was struck by flying debris. Examination of the wreckage and its components revealed no evidence of preimpact anomalies. The airplane's builder assisted the pilot/owner with a complete disassembly and annual inspection of the airplane about 1 year prior to the accident, with no mechanical, performance, or handling deficiencies noted with the speed brake stowed or deployed. The pilot/owner did not express any concerns to the builder about the speed brake, nor the handling characteristics of the airplane with the speed brake deployed.

Probable Cause and Findings

The National Transportation Safety Board determines the probable cause(s) of this accident to be: A loss of control in flight for undetermined reasons.

Findings

Occurrence #1: LOSS OF CONTROL - IN FLIGHT

Phase of Operation: APPROACH - VFR PATTERN - DOWNWIND

Findings

1. REASON FOR OCCURRENCE UNDETERMINED

Occurrence #2: IN FLIGHT COLLISION WITH TERRAIN/WATER

Phase of Operation: DESCENT - UNCONTROLLED

Findings

2. TERRAIN CONDITION - GROUND

Factual Information

On October 3, 2007, about 1818 eastern daylight time, an amateur-built Varieze, N8VE, was destroyed during collision with terrain after takeoff from Chesapeake Regional Airport (CPK), Chesapeake, Virginia. The certificated private pilot/owner was killed. Visual meteorological conditions prevailed, and no flight plan was filed for the local personal flight that was conducted under the provisions of 14 Code of Federal Regulations Part 91.

In an interview, the pilot's girlfriend stated that the purpose of the flight was to test the speed brake installed in the airplane. She quoted the pilot as saying that during the first hour he owned the airplane, he tried the speed brake and it really scared him. He had since accumulated 70 total hours in the airplane and was going to try the speed brake again.

In a written statement, one witness described watching the accident airplane taxi from its hangar to runway 5, then listening to the pilot announce the takeoff, crosswind, and downwind legs of the traffic pattern over the Unicom frequency. Seconds later, the witness heard a voice transmit cries for help.

In a telephone interview and written statement, a flight instructor stated he and a student joined the traffic pattern in their airplane, and heard the accident airplane announce takeoff and the subsequent legs of the traffic pattern, before he heard "panicked" cries for help over the radio. No further transmissions were heard from the accident airplane.

Another witness and his family were traveling southbound along a divided highway in their car, when they noticed the airplane flying erratically, at low altitude, as it paralleled their course on the west side of the highway. The airplane then crossed the roadway in front of their vehicle at low altitude, and circled back towards them before striking the ground on the east side of the roadway, scattering debris across all four lanes. The witnesses' vehicle drove through and over wreckage as their vehicle was struck by flying debris.

Examination of photographs from a news gathering helicopter revealed that the wreckage path was oriented westerly, and was about 300 feet long. The airplane and its components were scattered across the roadway, but the majority of the wreckage came to rest in a field on the west side of the highway. The Virginia State Police recovered the wreckage and moved it to a hangar on the airport, where Federal Aviation Administration (FAA) inspectors examined it on October 4, 2007.

According to the inspectors, control continuity was established from the cockpit area out to cable breaks, and from the breaks to their respective control surfaces. The cable breaks were consistent with overload. However, examination of some cables revealed flat spots, chafing, kinks, and looped strands. The cables were harvested and forwarded to the National

Transportation Safety Board Materials Laboratory in Washington, DC, for examination.

Examination of the engine revealed that the wooden propeller blades were broken off near the hub, and the fractures were splintered opposite the direction of rotation. The engine was rotated by hand at the propeller, and continuity was established through the drive train and valve train to the accessory section. Compression was confirmed using the thumb method. Ignition spark could not be established due to impact damage to the electronic ignition system and the one magneto.

The pilot/owner held a private pilot certificate, with a rating for airplane single-engine land. His most recent second-class medical certificate was issued April 18, 2006. The pilot reported 526 total hours of flight experience on that date. A cursory examination of his logbook revealed 570 total hours of flight experience.

According to FAA records and maintenance records, the airplane was manufactured in 1986, and had accrued approximately 1,547.7 total aircraft hours. The airplane's most recent condition inspection was completed on June 27, 2007, at 1,544.7 aircraft hours.

At 1819, the reported weather at Chesapeake Regional Airport included clear skies and wind from 110 degrees at 4 knots.

In addition to flight control cables, the propeller, fuel selector control, fuel selector valve, speed brake handle with cables, and the airspeed indicator were forwarded to the Safety Board Materials Laboratory, Washington, DC, for examination.

Examination of all components revealed no preimpact failures or anomalies. The propeller fractures were consistent with overstress. All cable fractures were consistent with overload. The fuel selector control and valve displayed no abnormal wear, and fractures were consistent with overload. Examination of the airspeed indicator did not provide definitive evidence of airspeed at ground contact.

The speed brake was described in the Varieze Owner's Manual as a "drag device" designed to increase the descent angle, and to slow the airplane during the landing flare. The speed range for deployment was 90 knots and slower. Above 95 knots, the speed brake panel would automatically close.

In a written statement, the airplane's designer explained that deployment of the speed brake initiates a low-intensity rumbling vibration, but does not affect the handling characteristics of the airplane. The speed brake creates only direct drag, due to its position on the belly of the airplane, and does not affect the airflow over any of the lifting or control surfaces. He added that a speed brake panel stuck in the deployed position above 95 knots would not adversely affect handling. He further stated that the airplane would climb with the panel deployed, but that a climb in this configuration required more power, and adversely affected engine cooling. The designer concluded that no owners or builders reported any problems or handling

deficiencies associated with the speed brake.

The builder of the accident airplane accrued 1,500 hours of flight experience in it, before he sold it. He assisted the accident pilot in a complete disassembly and annual inspection of the airplane in June 2006. The builder then flew the airplane for about 30 minutes, and he noted no deficiencies in the performance and handling of the airplane, with the speed brake deployed or stowed. Further, at no time did the accident pilot express any concerns, or ask any questions about the speed brake, its deployment, or the handling characteristics of the airplane with the speed brake deployed, of the builder.

Pilot Information

Certificate:	Private	Age:	44, Male
Airplane Rating(s):	Single-engine land	Seat Occupied:	Front
Other Aircraft Rating(s):	None	Restraint Used:	
Instrument Rating(s):	None	Second Pilot Present:	No
Instructor Rating(s):	None	Toxicology Performed:	Yes
Medical Certification:	Class 2 Without waivers/limitations	Last FAA Medical Exam:	April 18, 2006
Occupational Pilot:	No	Last Flight Review or Equivalent:	
Flight Time:	578 hours (Total, all aircraft), 70 hours (Total, this make and model)		

Aircraft and Owner/Operator Information

Aircraft Make:	Lambert John G	Registration:	N8VE
Model/Series:	Varieze	Aircraft Category:	Airplane
Year of Manufacture:		Amateur Built:	Yes
Airworthiness Certificate:	Experimental (Special)	Serial Number:	1996
Landing Gear Type:	Retractable - Tricycle	Seats:	2
Date/Type of Last Inspection:	June 27, 2007 Condition	Certified Max Gross Wt.:	
Time Since Last Inspection:	3 Hrs	Engines:	1 Reciprocating
Airframe Total Time:	1547 Hrs at time of accident	Engine Manufacturer:	Lycoming
ELT:		Engine Model/Series:	O-235
Registered Owner:	Jefrey M. Arnold	Rated Power:	110 Horsepower
Operator:	Jefrey M. Arnold	Operating Certificate(s) Held:	None

Meteorological Information and Flight Plan

Conditions at Accident Site:	Visual (VMC)	Condition of Light:	Day
Observation Facility, Elevation:	CPK,20 ft msl	Distance from Accident Site:	1 Nautical Miles
Observation Time:	18:19 Local	Direction from Accident Site:	30°
Lowest Cloud Condition:	Clear	Visibility	10 miles
Lowest Ceiling:	None	Visibility (RVR):	
Wind Speed/Gusts:	4 knots /	Turbulence Type Forecast/Actual:	/
Wind Direction:	110°	Turbulence Severity Forecast/Actual:	/
Altimeter Setting:	30.07 inches Hg	Temperature/Dew Point:	27°C / 27°C
Precipitation and Obscuration:	No Obscuration; No Precipitation		
Departure Point:	Chesapeake, VA (CPK)	Type of Flight Plan Filed:	None
Destination:	(CPK)	Type of Clearance:	None
Departure Time:	18:16 Local	Type of Airspace:	

Airport Information

Airport:	Chesapeake Regional Airport CPK	Runway Surface Type:	Asphalt
Airport Elevation:	20 ft msl	Runway Surface Condition:	Dry
Runway Used:	05	IFR Approach:	None
Runway Length/Width:	5500 ft / 100 ft	VFR Approach/Landing:	None

Wreckage and Impact Information

Crew Injuries:	1 Fatal	Aircraft Damage:	Destroyed
Passenger Injuries:	N/A	Aircraft Fire:	None
Ground Injuries:	N/A	Aircraft Explosion:	None
Total Injuries:	1 Fatal	Latitude, Longitude:	36.659442,-76.318885(est)

Administrative Information

Investigator In Charge (IIC):	Rayner, Brian
Additional Participating Persons:	Elwyn Jordan; FAA/FSDO; Richmond, VA
Original Publish Date:	May 6, 2009
Last Revision Date:	
Investigation Class:	Class
Note:	
Investigation Docket:	https://data.nts.gov/Docket?ProjectID=66813

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The NTSB does not assign fault or blame for an accident or incident; rather, as specified by NTSB regulation, “accident/incident investigations are fact-finding proceedings with no formal issues and no adverse parties ... and are not conducted for the purpose of determining the rights or liabilities of any person” (Title 49 *Code of Federal Regulations* section 831.4). Assignment of fault or legal liability is not relevant to the NTSB’s statutory mission to improve transportation safety by investigating accidents and incidents and issuing safety recommendations. In addition, statutory language prohibits the admission into evidence or use of any part of an NTSB report related to an accident in a civil action for damages resulting from a matter mentioned in the report (Title 49 *United States Code* section 1154(b)). A factual report that may be admissible under 49 *United States Code* section 1154(b) is available [here](#).