		NTSB ID: NYC03FA180		Aircraft Registration Number: N298RD	
		Occurrence Date: 08/24/2003		Most Critical Injury: Fatal	
		Occurrence Type: Accident		Investigated By: NTSB	
Location/Time					
Nearest City/Place Forest Hill	State MD	Zip Code 21050	Local Time 1115	Time Zone EDT	
Airport Proximity: Off Airport/Airstrip		Distance From Landing Facility: 0.5		Direction From Airport: 280	
Aircraft Information Summary					
Aircraft Manufacturer Aero Vodochody		Model/Series L-39ZO		Type of Aircraft Airplane	
Sightseeing Flight: No			Air Medical Transport Flight: No		
Narrative					
Brief narrative statement of facts, conditions and circumstances pertinent to the accident/incident:					
HISTORY OF FLIGHT					
<p>On August 24, 2003, at 1115 eastern daylight time, an Aero Vodochody L-39ZO, N298RD, was destroyed when it impacted a residential area, while maneuvering in the vicinity of the Forest Hill Industrial Airpark (MD31), Forest Hill, Maryland. The airline transport pilot was fatally injured. Visual meteorological conditions prevailed, and no flight plan was filed for the flight that originated from the Martin State Airport (MTN), Baltimore, Maryland. The personal flight was conducted under 14 CFR Part 91.</p> <p>Several witnesses, located within 1/4-mile of the accident site, observed the airplane maneuvering in the vicinity of the airpark prior to the accident.</p> <p>One witness stated that the airplane conducted a flyby for an open house at the airpark. After passing over the runway, the airplane ascended and then "dropped out of the sky."</p> <p>A second witness, who was mowing his lawn, observed the airplane as it approached the airpark from the east, "at a typical landing height." As the airplane passed over the witnesses, he recalled the airplane was traveling fast and the landing gear was retracted. The airplane continued towards the airpark and descended below a tree line. The witness thought the airplane was going to crash, when it rose back above the tree line, almost at a takeoff angle. The airplane then seemed to lose velocity, and the nose rose further upward. At the peak of the airplane's ascent, about 500-1,000 feet above the ground, it gently rolled over and began to descend towards the ground, with the engine roaring. The airplane continued the nose down descent and disappeared below a tree line.</p> <p>A third witness observed the airplane conducting a low pass over the airpark. After the pass, the airplane ascended and began to turn. During the turn, the nose of the airplane dropped. The nose then raised, and the airplane "went into an almost flat stall," before descending towards the ground and out of the witness's sight.</p> <p>A fourth witness stated that the airplane flew over the airpark at a low altitude, and began a climb. The airplane then started to "bank a little from side to side," and went into a nosedive towards the ground.</p> <p>The airplane impacted the southwest corner of a 3-story residential home, located about 1/2-mile west of the airpark, and subsequently impacted the ground, where a post crash fire ensued.</p> <p>The accident occurred during the hours of daylight, at 39 degrees, 35.06 minutes north longitude, 076 degrees, 23.29 minutes west latitude, at an elevation of 574 feet.</p>					
PILOT INFORMATION					

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Narrative (Continued)

The pilot held a commercial pilot certificate with ratings for multi-engine land and single-engine land airplanes. The pilot was also instrument rated. His most recent application for a Federal aviation Administration (FAA) second-class medical certificate was dated on August 16, 2002.

The pilot reported that he had accumulated about 6,950 hours of total flight experience on his application for flight insurance dated April 29, 2002. Attempts to obtain the pilot's flight logbook were unsuccessful.

On May 15, 2002, the pilot applied for, and was granted, a letter of authorization (LOA), to act as pilot-in-command in the L-39.

According the manager of the airplane, the pilot had accumulated about 25 hours of total flight experience in the L-39.

AIRCRAFT INFORMATION

The airplane was a retired Czech Republic military single engine, turbofan (jet) trainer, with tandem seating. An AI-25TL turbofan engine, which had two shafts, by-pass flow, 12-stages of compressor, an annular combustion chamber, and three stages of gas turbine, powered the airplane, which had a maximum sea level static thrust of 3,790 pounds.

According to maintenance records, the last annual inspection was performed April 28, 2003. During the inspection, no defects were noted with either the airframe or engine.

The manager of the airplane stated that the ejection seat system was disabled. He also stated that the rear seat oil temperature gauge was inoperative.

METEOROLOGICAL INFORMATION

At 1155, weather conditions at the Martin State Airport, which was located about 15 nautical miles south of the accident site, included calm winds, 10 miles visibility, and clear skies.

WRECKAGE INFORMATION

The first impact point was observed at the southwest corner of the 3-story residential home. At the base of the home were fragments of the airplane's skin. About 20 feet beyond the home was a large hardwood tree that had fresh scars on the bark, near the base. The angle from the impact at the home, to the impact at the tree, was about 50 degrees.

At the base of the tree was the left aileron and fragments of the left wing. To the left of the tree was the left flap. About 8 feet right of the tree, was a 3-foot deep crater in the ground. Inside the crater were several hard-points, the speed brake, and a section of the rudder. About 20 feet left of the crater was the vertical stabilizer and the remaining section of rudder. About 10 feet beyond the crater was the mid-section of the left wing structure and the horizontal stabilizer. The left main landing gear assembly remained attached to the wing and was observed in the retracted position. The left wing flap indicator, which was a red and white barber pole pin located on the upper surface of the wing, sustained impact damage, and its position could not be determined.

About 30 feet beyond the crater was an approximate 10-foot section of the right wing. The separation point of the wing was approximately at the main landing gear wheel well area. The right wing flap surface remained attached, and was extended about 30 degrees. The right wing flap indicator indicated that the flap was set at 20 degrees. The right main landing gear assembly remained attached to the wing and was extended outboard about 45 degrees beyond its normal

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Narrative (Continued)

90-degree position. When the landing gear assembly was examined, it could be positioned into the retracted position. Along side of the wing was the right aileron, which was separated from the wing.

About 80 feet beyond the right wing was the engine, which was separated from the main fuselage, and partially exposed to a post-crash fire. Examination of the engine revealed that it came to rest on its left side, on top of a small trailer and some shrubs. The engine was complete from the inlet case and bullet, to the fan exhaust duct. All of the fan ducts were buckled and crushed. The first and second stage fan disks were intact, and all of the respective blades were in place and full length. There was an approximate 270-degree arc of the first stage fan blades that had the outer 2-inches of the tips bent opposite the direction of rotor rotation. Within the 270-degree arc, there was a 90-degree arc of blades that had the leading edge tip corner bent towards the direction of rotor rotation. The first stage fan blades did not have any impact damage to the leading edges. There were several randomly located first stage fan blades that had tears on the trailing edges, which corresponded to damage on the leading edges of the first stage stator vanes. All of the second stage fan blades were bent opposite the direction of rotor rotation. The third stage rotor was not visible. The fan rotor could not be rotated.

The accessory gearbox section was intact except for the area that was exposed to the post crash fire, and all of the components were in place except for the fuel control, which was separated. The fuel control throttle arm was observed in the full power position; however, the arm was separated from its associated rigging.

No evidence of an uncontainment, case rupture, or in-flight fire, was noted during the engine examination.

About 20 feet beyond the engine was the main fuselage, which came to rest upright and was exposed to the post-impact fire.

The forward instrument panel, rear instrument panel, and flight controls were destroyed or separated from the fuselage; however, four gauges from the rear cockpit instrument panel were recovered and examined. The gauges were the engine tachometer, the engine fuel pressure indicator, and the oil pressure and temperature indicators. The engine tachometer needles were observed at "28 percent" for N1, and "56 percent" for N2. The fuel pressure needle was observed at "66," the oil pressure needle and oil temperature gage was observed at "2.5," and "-05;" respectively.

The landing gear selector and annunciator lights were destroyed.

All of the airplane's major components were accounted for at the accident site; however, flight control continuity could not be established due to impact damage and the post-impact fire.

MEDICAL AND PATHOLOGICAL INFORMATION


The Baltimore County Office of the Chief Medical Examiner, Baltimore, Maryland, performed an autopsy on the pilot, on August 25, 2003.

The FAA Toxicology and Accident Research Laboratory, Oklahoma City, Oklahoma conducted toxicological testing on the pilot.

ADDITIONAL INFORMATION

Flight Characteristics

According to the airplane's Flight Training manual, the time required for the engine to accelerate from a low engine speed to high engine speed (idle to max power), was approximately 9 to 12

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seconds. "It is desirable, for safety reasons to maintain at least 70 percent RPM on landing approach until landing assured."


The manager of the airplane also flew in the airplane. He stated that he had flown with the accident pilot on at least two occasions, and recalled informing him to maintain 75 percent rpm or better while landing the airplane, in the event that a go-around had to be executed. He accentuated to the pilot that he needed to be aware that the engine took close to 12 seconds to spool up, and having the extra power lessened the engines response time in the event of a go-around.


Engine Instruments

According to the L-39 Flight Manual, the "normal setting" for the fuel pressure gauge was 65 kilopascal/centimeter squared, the oil pressure gauge was about 5 kilopascal/centimeter squared, and the oil temperature gage was about 90 degrees Celsius.

Wreckage Release

The airplane wreckage was released on August 25, 2003, to a representative of the owners insurance company.

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Landing Facility/Approach Information					
Airport Name	Airport ID:	Airport Elevation	Runway Used	Runway Length	Runway Width
Forest Hill Industrial Airpark	MD31	476 Ft. MSL	31	2650	50
Runway Surface Type: Asphalt					
Runway Surface Condition: Dry					
Type Instrument Approach: Unknown					
VFR Approach/Landing: Go Around					
Aircraft Information					
Aircraft Manufacturer		Model/Series		Serial Number	
Aero Vodochody		L-39ZO		731013	
Airworthiness Certificate(s): Experimental (Special)					
Landing Gear Type: Retractable - Tricycle					
Homebuilt Aircraft? No	Number of Seats: 2	Certified Max Gross Wt.	12500 LBS	Number of Engines: 1	
Engine Type:	Engine Manufacturer:	Model/Series:	Rated Power:		
Turbo Fan	Aerotechnik	AI-25TL	3790 LBS		
- Aircraft Inspection Information					
Type of Last Inspection	Date of Last Inspection	Time Since Last Inspection	Airframe Total Time		
Annual	04/28/2003	Hours	2292 Hours		
- Emergency Locator Transmitter (ELT) Information					
ELT Installed? No	ELT Operated?	ELT Aided in Locating Accident Site?			
Owner/Operator Information					
Registered Aircraft Owner		Street Address			
Bond Jet LLC		City	State	Zip Code	
		Wilmington	DE	19808	
Operator of Aircraft		Street Address			
Same as Reg'd Aircraft Owner		Same as Reg'd Aircraft Owner			
		City	State	Zip Code	
Operator Does Business As:			Operator Designator Code:		
- Type of U.S. Certificate(s) Held: None					
Air Carrier Operating Certificate(s):					
Operating Certificate:			Operator Certificate:		
Regulation Flight Conducted Under: Part 91: General Aviation					
Type of Flight Operation Conducted: Personal					
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First Pilot Information

Name On File	City On File	State On File	Date of Birth On File	Age 64
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Sex: M	Seat Occupied: Front	Principal Profession: Unknown	Certificate Number: On File
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Certificate(s): Commercial

Airplane Rating(s): Multi-engine Land; Single-engine Land

Rotorcraft/Glider/LTA: Helicopter

Instrument Rating(s): Airplane

Instructor Rating(s): None

Type Rating/Endorsement for Accident/Incident Aircraft? Yes	Current Biennial Flight Review?
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Medical Cert.: Class 2	Medical Cert. Status: Valid Medical--w/ waivers/lim.	Date of Last Medical Exam: 08/16/2002
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- Flight Time Matrix	All A/C	This Make and Model	Airplane Single Engine	Airplane Multi-Engine	Night	Instrument		Rotorcraft	Glider	Lighter Than Air
						Actual	Simulated			
Total Time	6950	25								
Pilot In Command(PIC)										
Instructor										
Last 90 Days										
Last 30 Days										
Last 24 Hours										

Seatbelt Used? Yes	Shoulder Harness Used? Yes	Toxicology Performed? Yes	Second Pilot? No
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Flight Plan/Itinerary

Type of Flight Plan Filed: None

Departure Point Baltimore	State MD	Airport Identifier MTN	Departure Time 1100	Time Zone •
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Destination Local Flight	State	Airport Identifier	
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Type of Clearance: None

Type of Airspace: Class G

Weather Information

Source of Briefing: Unknown

Method of Briefing: Unknown

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Weather Information

WOF ID	Observation Time	Time Zone	WOF Elevation	WOF Distance From Accident Site	Direction From Accident Site
MTN	1155	EDT	22 Ft. MSL	12 NM	180 Deg. Mag.

Sky/Lowest Cloud Condition: Clear Ft. AGL Condition of Light: Day

Lowest Ceiling: None Ft. AGL Visibility: 10 SM Altimeter: 30.17 "Hg

Temperature: 24 °C Dew Point: 8 °C Wind Direction: Variable Density Altitude: Ft.

Wind Speed: Calm Gusts: Weather Conditions at Accident Site: Visual Conditions

Visibility (RVR): Ft. Visibility (RVV) SM Intensity of Precipitation:

Restrictions to Visibility: None

Type of Precipitation: None

Accident Information

Aircraft Damage: Aircraft Fire: Aircraft Explosion

Classification:

- Injury Summary Matrix	Fatal	Serious	Minor	None	TOTAL
First Pilot	1				1
Second Pilot					
Student Pilot					
Flight Instructor					
Check Pilot					
Flight Engineer					
Cabin Attendants					
Other Crew					
Passengers					
- TOTAL ABOARD -	1				1
Other Ground					
- GRAND TOTAL -	1				1

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Occurrence Type: Accident

Administrative Information

Investigator-In-Charge (IIC)

Stephen M. Demko

Additional Persons Participating in This Accident/Incident Investigation:

Anthony Serio

ASI

FAA

890 Airport Park Rd

Glen Burnie, MD 21061