 National Transportation Safety Board FACTUAL REPORT AVIATION		NTSB ID: LAX06FA124		Aircraft Registration Number: N39DF	
		Occurrence Date: 02/26/2006		Most Critical Injury: Fatal	
		Occurrence Type: Accident		Investigated By: NTSB	
Location/Time					
Nearest City/Place California City		State CA	Zip Code 93505	Local Time 0828	Time Zone PST
Airport Proximity: Off Airport/Airstrip		Distance From Landing Facility:		Direction From Airport:	
Aircraft Information Summary					
Aircraft Manufacturer Aero Vodochody		Model/Series L39		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 February 26, 2006, about 0828 Pacific standard time, an Aero Vodochody, L39, N39DF, crashed into hilly terrain during a low altitude course reversal maneuver about 6.4 nautical miles northwest of California City, California. The experimental category turbojet was owned and operated by Mach 1 Aviation, Universal City, California. The flight was performed under the provisions of 14 Code of Federal Regulations Part 91. The airplane was fragmented upon colliding with terrain and thereafter was consumed by fire. The airline transport certificated (front seat) pilot, and the commercial certificated (rear seat) pilot were killed. Visual meteorological conditions prevailed at the time of the aerial photography flight, and no flight plan was filed. The flight originated from Van Nuys, California, about 0726.</p>					
<p>The accident occurred during a flight conducted for the purpose of filming a motion picture involving the L39 airplane. The film's producer-director was in the lead Cessna 310 airplane (camera ship) and made a video recording of a portion of the accident airplane's final maneuver. Additionally, an audio and video recording was made by a camera in the accident airplane.</p>					
<p>According to the director, at the commencement of the accident airplane's course reversal maneuver, the airplane had been cruising about 5,500 feet mean sea level. The operator indicated that the pilot who occupied the front seat was in command, and the pilot who was positioned in the rear seat was the "co-pilot." The operator also reported that the airplane could be flown from either seat. However, according to the operator, the front seat pilot was more experienced and would generally be the pilot who was handling the controls.</p>					
<p>The Safety Board investigator reviewed the voice communications between the pilots to ascertain who was issuing instructions, and who was receiving instructions. The review of the recorded communications indicates that during the majority of the flight, the rear seat pilot provided safety advisories to the front seat pilot. The following are examples of communications that occurred between the pilots a few minutes after takeoff:</p>					
<p>Front seat pilot: "Sorry, I won't pull that hard next time." Rear seat pilot: "No, it's okay. I just didn't want you to stall." Front seat pilot: "As soon as I felt a burble I broke the angle of attack."</p>					
<p>Later during the flight, the following communications occurred when the producer-director requested that the accident airplane crew reposition itself for another film shot:</p>					
<p>Front seat pilot: "Okay. Coming back. I'll give you power in just a second...." Rear seat pilot: "That's okay. I just don't want you to....I'm just here to be your little voice....Watch your power...."</p>					
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Narrative (Continued)

Several minutes prior to the accident the airplane was in a valley and positioned such that it was closing on a hillside. To avoid impacting the rapidly rising terrain directly ahead of the airplane, the crew had to abruptly climb. During this episode, the rear seat pilot stated the following to the front seat pilot: "Power. Power. Power. Let's go."

About two minutes prior to the crash, the crewmembers appeared to change roles. The rear seat pilot indicated that he would fly the airplane, and the front seat pilot provided safety-related comments. During this period the following communications occurred:

Rear seat pilot: "I got the plane."

Front seat pilot: "You got the aircraft?"

Rear seat pilot: "Yeah."

Then, the producer-director, who was on the same radio frequency, issued his final directions to the accident airplane's crew (which crashed seconds later):

Director: "You're doing really good. Give me a sharp snap roll to the right and pull down out of frame."

Front seat pilot: "You okay [name of rear seat pilot]?"

Rear seat pilot: "Yep. I got it."

A Safety Board video specialist's review of the video indicates that the accident airplane then executed a 90-degree roll to the right and its nose fell below the horizon. About 1 second thereafter, the airplane abruptly rolled further right to approximately 135 degrees of bank, and the nose dropped further as the airplane directly approached hilly terrain. Two seconds later the rear seat pilot stated, "I got it, I got it, I got it." The front seat pilot stated, "ease off" and the rear seat pilot responded, "ease off." Four seconds later, the airplane began an abrupt left roll back to approximately 30 degrees of bank. Two seconds thereafter, the airplane rolled right again to about 45 degrees bank as the airplane continued to close on the side of a hill. During this time, the rear seat pilot stated, "I got it, ease off, ease off, okay." The video ended 4 seconds later with the airplane approaching terrain.

The recording recovered from the accident airplane was too impact-damaged to extract additional images. The recording taken from the camera ship showed the accident airplane descending, and then the airplane went out of frame. When the video camera was directed toward the area where the accident airplane was expected to reappear, images of a developing plume of smoke and fireball were apparent on the underlying hillside in an area commensurate with the accident airplane's anticipated location. The fire spread in a longitudinal direction away from the camera ship's location, and in a direction consistent with the accident airplane's final direction of travel.

PERSONNEL INFORMATION

Pilot (front seat)

The pilot, age 43, held an airline transport pilot certificate with the following ratings: airplane single engine land, airplane multiengine land and glider. He held FAA authorization to fly an experimental L39 airplane.

According to Federal Aviation Administration (FAA) records, on the pilot's August 2005, application for a second-class aviation medical certificate, he reported 5,500 total civilian flight hours. No military flight hours were reported.

The pilot's logbook was not recovered for examination. The pilot's flying experience in the model of accident airplane was not determined.

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Narrative (Continued)

Pilot (rear seat)

The pilot, age 60, held a commercial pilot certificate with the following ratings: airplane single engine land, airplane multiengine land limited to center thrust, and instrument airplane. He held FAA authorization to fly an experimental L39 airplane.

According to FAA records, on the pilot's December 2004, application for a second-class aviation medical certificate, he reported that his total civilian and military flight time was 2,000 and 500 hours, respectively.

The pilot's logbook was not recovered for examination. The pilot's flying experience in the model of accident airplane was not determined.

AIRCRAFT INFORMATION

Aero Vodochody manufactured the two-seat, low-wing, turbojet, serial number 931320, in Czechoslovakia in 1979. The airplane had been manufactured as a primary military jet trainer.

The owner reported that an annual inspection was completed on July 25, 2005. By the accident date the experimental category airplane's total time was about 3,000 hours.

METEOROLOGICAL INFORMATION

The producer-director reported that, in the vicinity of the accident site, there were few clouds at 25,000 feet. The wind was light and variable, there was no turbulence, and the visibility was about 25 miles.

COMMUNICATION

Within a couple of minutes before and after the accident, none of the airplanes associated with the motion picture filming operation were in communication with any FAA facility.

During this time period, the accident airplane was being filmed by the camera ship, and an audio and video recording was being made in the accident airplane. This approximately 1-hour-long recording commenced with the start of the accident airplane's takeoff roll at Van Nuys Airport, and it terminated a few seconds before the crash.

FLIGHT RECORDERS

The airplane was not equipped with a cockpit voice or flight recorder, and no recording devices were required by the FAA. However, the accident airplane was equipped with a fixed-mounted video recorder that was located in its empennage. This recorder showed a forward-looking view of the fuselage, along the airplane's longitudinal axis, and it filmed the wing flaps, ailerons, and the aft portion of the canopy. It also captured images of the sky condition above and ahead of the airplane, and the underlying terrain. During flight, movement of the flaps and ailerons were apparent, and no anomalies were noted. The pilots' communications and traffic-related audio alert signals from within the airplane were also recorded.

In addition to providing the Safety Board investigator with this recording, the operator also provided the Safety Board with a transcript of the voice communications during the hour-long accident flight and a copy of the video recording made by the camera ship. The accident airplane's recording was reviewed by the Safety Board investigator and by a specialist in the Safety Board's Vehicle Recorder Division, Washington, D.C., who prepared a Video Factual Report.

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WRECKAGE AND IMPACT INFORMATION

From an examination of the accident site and airplane wreckage, the airplane was found to have descended into 3,100-foot mean sea level hilly terrain. The initial point of impact (IPI) was noted by the presence of an estimated 3-foot-wide by 10-foot-long ground swath in the 30-degree upsloping soft dirt hillside. Soil was loosened in the swath to an estimated 6-inch depth. Paint chips were noted in the soil in this area. Fragments from the outboard portion of the separated right wing tip were also located in the vicinity of the IPI.

In total, fragmented portions of the airplane were principally found over an estimated 800-foot-long by 30-foot-wide west-southwesterly track. The track commenced at the IPI and terminated at the location of the engine and empennage. The cockpit was located in a ravine approximately midway between the IPI and the engine/empennage. The cockpit was totally fragmented and destroyed. The empennage was consumed by fire. (See the wreckage distribution diagrams and global positioning satellite coordinate list for additional details.)

The severity of fire damage to flight controls and associated system components precluded confirmation of their preimpact integrity. Examination of available airframe and engine components revealed no evidence of preimpact mechanical malfunction.

FIRE

The video recordings indicated no evidence of smoke or fire during the airplane's flight. The video indicated that a fire occurred commensurate with ground impact. The fire consumed the airplane.


MEDICAL AND PATHOLOGICAL INFORMATION


On February 28, 2006, autopsies were performed on both pilots by the Kern County Sheriff-Coroner's Office, Bakersfield, California. The autopsy findings for both pilots indicated they died from multiple blunt force and thermal injuries.

Forensic toxicology was performed on specimens from both pilots by the FAA's Bioaeronautical Sciences Research Laboratory, Oklahoma City, Oklahoma. The toxicology reports stated no ethanol or any screened drugs were detected.

SURVIVAL ASPECTS

The airplane was equipped with ejection seats. The seat's activation mechanism had been rendered inoperable according to the FAA.

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Landing Facility/Approach Information					
Airport Name	Airport ID:	Airport Elevation Ft. MSL	Runway Used NA	Runway Length	Runway Width
Runway Surface Type:					
Runway Surface Condition:					
Type Instrument Approach: NONE					
VFR Approach/Landing: None					
Aircraft Information					
Aircraft Manufacturer Aero Vodochody		Model/Series L39		Serial Number 931320	
Airworthiness Certificate(s): Experimental (Special)					
Landing Gear Type: Retractable - Tricycle					
Homebuilt Aircraft? No	Number of Seats: 2	Certified Max Gross Wt.	10600 LBS	Number of Engines: 1	
Engine Type: Turbo Jet	Engine Manufacturer: Ivchenko	Model/Series: AI126TL	Rated Power: 4000 LBS		
- Aircraft Inspection Information					
Type of Last Inspection Annual	Date of Last Inspection 07/2005	Time Since Last Inspection 30 Hours	Airframe Total Time 3000 Hours		
- Emergency Locator Transmitter (ELT) Information					
ELT Installed? Yes	ELT Operated? No	ELT Aided in Locating Accident Site? No			
Owner/Operator Information					
Registered Aircraft Owner Mach 1 Aviation, Inc.		Street Address 10 Universal City Plz, Ste. 2260			
		City Universal City	State CA	Zip Code 91608	
Operator of Aircraft Same as Reg'd Aircraft Owner		Street Address 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: Other Work Use					
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First Pilot Information

Name On File	City On File	State On File	Date of Birth On File	Age 43
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Sex: M	Seat Occupied: Front	Principal Profession: Occupational Pilot	Certificate Number: On File
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Certificate(s): Airline Transport

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

Rotorcraft/Glider/LTA: Glider

Instrument Rating(s): Airplane

Instructor Rating(s): None

Type Rating/Endorsement for Accident/Incident Aircraft?	Current Biennial Flight Review?
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Medical Cert.: Class 2	Medical Cert. Status: With Waivers/Limitations	Date of Last Medical Exam: 08/2005
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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	5500									
Pilot In Command(PIC)										
Instructor										
Last 90 Days										
Last 30 Days										
Last 24 Hours	1	1	1							

Seatbelt Used? Yes	Shoulder Harness Used? Yes	Toxicology Performed? Yes	Second Pilot? Yes
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Flight Plan/Itinerary

Type of Flight Plan Filed: None

Departure Point Van Nuys	State CA	Airport Identifier VNY	Departure Time 0726	Time Zone PST
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Destination Local Flight	State	Airport Identifier	
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Type of Clearance: None

Type of Airspace:

Weather Information

Source of Briefing: Unknown

Method of Briefing:

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Weather Information

WOF ID	Observation Time	Time Zone	WOF Elevation Ft. MSL	WOF Distance From Accident Site NM	Direction From Accident Site Deg. Mag.
Sky/Lowest Cloud Condition: Few			25000 Ft. AGL		Condition of Light: Day
Lowest Ceiling: None			Ft. AGL	Visibility: 25 SM	Altimeter: "Hg
Temperature: 16 °C	Dew Point:	°C	Wind Direction: Variable		Density Altitude: Ft.
Wind Speed: Light and Variable	Gusts:	Weather Conditions at Accident Site: Visual Conditions			
Visibility (RVR): Ft.	Visibility (RVV)	SM	Intensity of Precipitation:		
Restrictions to Visibility: No Obscuration; No Precipitation					
Type of Precipitation:					

Accident Information

Aircraft Damage: Destroyed	Aircraft Fire: Ground	Aircraft Explosion: None
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Classification:

- Injury Summary Matrix	Fatal	Serious	Minor	None	TOTAL
First Pilot	1				1
Second Pilot	1				1
Student Pilot					
Flight Instructor					
Check Pilot					
Flight Engineer					
Cabin Attendants					
Other Crew					
Passengers					
- TOTAL ABOARD -	2				2
Other Ground					
- GRAND TOTAL -	2				2

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Administrative Information

Investigator-In-Charge (IIC)

Wayne Pollack

Additional Persons Participating in This Accident/Incident Investigation:

Gary Bernard
Federal Aviation Administration
Van Nuys, CA