
		NTSB ID: LAX03LA173		Aircraft Registration Number: N139RH	
		Occurrence Date: 05/30/2003		Most Critical Injury: Fatal	
		Occurrence Type: Accident		Investigated By: NTSB	
Location/Time					
Nearest City/Place Tracy	State CA	Zip Code 95376	Local Time 1914	Time Zone PDT	
Airport Proximity: On Airport		Distance From Landing Facility: 0.5		Direction From Airport:	
Aircraft Information Summary					
Aircraft Manufacturer Aero Vodochody		Model/Series L-39		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 May 30, 2003, at 1914 Pacific daylight time, an Aero Vodochody L-39C Albatros, N139RH, collided with terrain while performing team aerobatic maneuvers in the vicinity of Tracy, California. The airplane was operated by Redstar Air Shows, Inc., under the provisions of 14 CFR Part 91. The pilot was fatally injured and the airplane was destroyed. Visual meteorological conditions prevailed and a visual flight plan had not been filed. The flight originated at Byron, California, about 1655.</p>					
<p>A flight of three Aero Vodochody L-39's were practicing low level team aerobatics in a designated box area in the vicinity of Tracy, California. The team's aerobatic coach said that the hard deck for this practice session was 1,000 feet. The majority of the witnesses reported that the airplane appeared to "rock" and the nose pitched down on the backside of a low altitude loop just before it impacted the ground. The pilot did not appear to attempt to eject from the airplane.</p>					
PERSONNEL INFORMATION					
<p>The pilot held an Airline Transport Pilot Certificate with single engine land, multiengine land, and instrument airplane ratings. She had type ratings in the Boeing 737, DC-9, and DHC-7. The Pilot/Operator Aircraft Accident Report (NTSB Form 6120) submitted by the operator indicated the pilot had about 14,000 hours of total flight time, 10,000 hours in multiengine airplanes, 4,000 hours in single engine airplanes and 16 hours in the L-39. The date of her last biennial flight review was in January, 2003. She held a first class medical certificate dated December 20, 2002, with no limitations or restrictions.</p>					
<p>The team's aerobatic coach told the Safety Board Investigator-in-Charge (IIC) that the pilot had extensive aerobatic experience and that she had owned a number of aerobatic airplanes including a Pitts Special and Cap232. She did not participate in competitive aerobatics. She had been a US Navy pilot for 4 years with flight time in the A-4 Skyhawk as an aggressor pilot. Federal Aviation Administration (FAA) records show she obtained her commercial pilot certificate in December, 1977, through military competency. Her check out in the L-39 was the first time flying a single engine high performance jet since flying the A-4. Aircraft logbooks recorded her as flying this L-39 nine times within the last 20 days accumulating about 5.7 hours of flight time.</p>					
AIRCRAFT INFORMATION					
<p>The tandem seat jet airplane was powered by a single 3,792 pound thrust, Motor Sich, AI-25L, turbojet engine. The airplane and engine underwent its last FSDO-approved L-39 required inspection on March 24, 2003, at a total aircraft time of 1,224 hours. The engine had a total time of 1,157</p>					

 <p>National Transportation Safety Board FACTUAL REPORT AVIATION</p>	NTSB ID: LAX03LA173
	Occurrence Date: 05/30/2003
	Occurrence Type: Accident

Narrative (Continued)

hours with 407 hours since last overhaul.

The airplane was manufactured by Aero-Vodochody of Czechoslovakia and categorized by the FAA as experimental with operational limitations of an exhibition-group II aircraft.

WRECKAGE AND IMPACT INFORMATION

The wreckage was located about a half of mile west of the New Jerusalem Airport, California, in a freshly plowed field.

Two distinct sections of wreckage were identified. An approximately 5 foot deep impression area of disturbed earth embedded with metal fragments, plexiglass shards, and black discolored cratered earth surface. A long thin earth impression extended outward from the crater area and at end of this impression the pitot tube was embedded into the ground at about a 60 degree angle. Immediately surrounding this disturbed area were pieces of metal, landing gear, and wire bundles. Debris fanned out from this point in a cone shape about 100 yards to the southeast. About 70 feet to the south was the second area of wreckage, which consisted of the tail section containing the engine.

MEDICAL AND PATHOLOGICAL INFORMATION

The Sheriff-Coroner of San Joaquin County conducted an autopsy on the pilot. According to the coroners report the pilot died of multiple blunt force injuries.

A toxicology test for ethanol and drugs were negative.

A review of the FAA medical records revealed no abnormal medical findings, limitations, or waivers throughout the history of the pilot.

FIRE

Witnesses reported a post impact fire. Large sections of the wreckage exhibited areas of black soot, ash, and thermal damage. Fire crews arrived on scene and extinguished the wreckage fire.

TESTS AND RESEARCH

The wreckage was relocated to Plain Parts in Sacramento and examined by the FAA and Safety Board investigators.

All flight control bell cranks, carry-thru bell cranks, control linkages, rods and rod ends were identified as being present within the wreckage. None of these components showed signs of preimpact failure or corrosion.

The pilots ejection seat was examined. The rocket pack had not been fired. The pilots ejection seat handle was found close to the pilots body. The rocket pack activation lanyard was found severed. The rod used to push the seat out of the cockpit was extended. The canopy latch was in the middle position. The drogue chute was fired and partially extended. The aft ejection seat was examined, found to be pinned, and the firing primers were not activated.

All the compressor blades on the first stage of the engine compressor were sheared off at their bases. Blades in the additional compressor sections were bent in the clockwise direction.

ADDITIONAL INFORMATION

Witnesses

National Transportation Safety Board

FACTUAL REPORT

AVIATION

NTSB ID: LAX03LA173

Occurrence Date: 05/30/2003

Occurrence Type: Accident

Narrative (Continued)

Five of the seven witnesses interviewed clearly described the airplane as being in the last half of a loop when the airplane collided with the ground and that it did not appear that the pilot attempted to eject from the airplane. An initial statement taken by the San Joaquin Sheriff from the team aerobatic coach on scene clearly states that the pilots airplane was on the back half of a loop when the airplane appeared to rock and the nose drop towards the ground prior to impact.

The operator and team aerobatic coach stated in the Pilot Operator Accident Report (NTSB Form 6120) that the airplane was doing a series of level aileron rolls at 1,500 feet when the plane leveled off and started a gradual left descending turn until impact with the ground.

Loop Maneuver


A loop is a 360 degree turn done in the vertical plane. Executing a loop will normally subject the pilot to +3 g's or more when entering or exiting the maneuver.


Aileron Roll Maneuver

An aileron roll is the rolling of the airplane about the longitudinal axis using coordinated control inputs. The ailerons are the primary controls for this maneuver. The maneuver typically will subject the pilot to +1 g throughout the maneuver.

G Induced Loss of Consciousness (GLOC)

The average threshold of a pilot to blackout is 4.7 g's and laps in to unconsciousness at 5.4 g's. The rate of g on-load is a significant factor in establishing the amount of g load a pilot can withstand (AC-91-61).

 National Transportation Safety Board FACTUAL REPORT AVIATION		NTSB ID: LAX03LA173			
		Occurrence Date: 05/30/2003			
		Occurrence Type: Accident			
Landing Facility/Approach Information					
Airport Name	Airport ID:	Airport Elevation	Runway Used	Runway Length	Runway Width
New Jeruselem	1Q4	80 Ft. MSL	12	4000	100
Runway Surface Type: Asphalt					
Runway Surface Condition: Dry					
Type Instrument Approach: NONE					
VFR Approach/Landing: None					
Aircraft Information					
Aircraft Manufacturer		Model/Series		Serial Number	
Aero Vodochody		L-39		332627	
Airworthiness Certificate(s): Experimental (Special)					
Landing Gear Type: Retractable - Tricycle					
Homebuilt Aircraft? No	Number of Seats: 2	Certified Max Gross Wt.	10360 LBS	Number of Engines: 1	
Engine Type:	Engine Manufacturer:	Model/Series:	Rated Power:		
Turbo Fan	Aero Engines	AI-25L	3792 LBS		
- Aircraft Inspection Information					
Type of Last Inspection	Date of Last Inspection	Time Since Last Inspection	Airframe Total Time		
AAIP	03/24/2003	7.9 Hours	1165.2 Hours		
- Emergency Locator Transmitter (ELT) Information					
ELT Installed? No	ELT Operated? No	ELT Aided in Locating Accident Site? No			
Owner/Operator Information					
Registered Aircraft Owner		Street Address			
Redstar Air Shows Inc		5592 Drakes Dr			
		City	State	Zip Code	
		Byron	CA	94514	
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:					
Operating Certificate:			Operating Certificate:		
Regulation Flight Conducted Under: Part 91: General Aviation					
Type of Flight Operation Conducted: Air Race/Show					
FACTUAL REPORT - AVIATION					

 <p>National Transportation Safety Board FACTUAL REPORT AVIATION</p>	NTSB ID: LAX03LA173
	Occurrence Date: 05/30/2003
	Occurrence Type: Accident

First Pilot Information

Name On File	City On File	State On File	Date of Birth On File	Age 48
-----------------	-----------------	------------------	--------------------------	-----------

Sex: M	Seat Occupied: Front	Principal Profession: Civilian Pilot	Certificate Number: On File
--------	----------------------	--------------------------------------	-----------------------------

Certificate(s): Airline Transport

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

Rotorcraft/Glider/LTA: None

Instrument Rating(s): Airplane

Instructor Rating(s): None

Type Rating/Endorsement for Accident/Incident Aircraft? Yes	Current Biennial Flight Review? 01/01/2003
---	--

Medical Cert.: Class 1	Medical Cert. Status: Valid Medical--no waivers/lim.	Date of Last Medical Exam: 12/20/2002
------------------------	--	---------------------------------------

- 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	14000	16	4000	10000	2000	700	200			
Pilot In Command(PIC)										
Instructor										
Last 90 Days		16								
Last 30 Days		12								
Last 24 Hours		1								

Seatbelt Used? Yes	Shoulder Harness Used? Yes	Toxicology Performed? Yes	Second Pilot? No
--------------------	----------------------------	---------------------------	------------------

Flight Plan/Itinerary

Type of Flight Plan Filed: None

Departure Point Byron	State CA	Airport Identifier C83	Departure Time 1655	Time Zone PDT
--------------------------	-------------	---------------------------	------------------------	------------------

Destination Local Flight	State	Airport Identifier	
-----------------------------	-------	--------------------	--


Type of Clearance: None

Type of Airspace: Class E

Weather Information

Source of Briefing: No record of briefing

Method of Briefing: Unknown

 <p>National Transportation Safety Board FACTUAL REPORT AVIATION</p>	NTSB ID: LAX03LA173
	Occurrence Date: 05/30/2003
	Occurrence Type: Accident

Weather Information

WOF ID	Observation Time	Time Zone	WOF Elevation	WOF Distance From Accident Site	Direction From Accident Site
SCK	1855	PDT	30 Ft. MSL	20 NM	20 Deg. Mag.
Sky/Lowest Cloud Condition: Clear				Ft. AGL	Condition of Light: Day
Lowest Ceiling: None			Ft. AGL	Visibility: 10 SM	Altimeter: 29.87 "Hg
Temperature: 25 °C	Dew Point: 14 °C	Wind Direction: 300		Density Altitude: 80 Ft.	
Wind Speed: 12	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

National Transportation Safety Board

FACTUAL REPORT

AVIATION



NTSB ID: LAX03LA173

Occurrence Date: 05/30/2003

Occurrence Type: Accident

Administrative Information

Investigator-In-Charge (IIC)

Van S. McKenny

Additional Persons Participating in This Accident/Incident Investigation:

Jose Benavides
Aviation Safety Inspector
Federal Aviation Administration
1420 Harbor Bay Parkway
Oakland, CA 94502