Aviation Investigation Final Report

Location:	Pecan Island, Louisiana	**Accident Number:**	FTW01FA063
Date & Time:	February 10, 2001, 12:00 Local	**Registration:**	N901NL
Aircraft:	Aero Vodochody L-39C	**Aircraft Damage:**	Destroyed
Defining Event:		**Injuries:**	2 Fatal
Flight Conducted Under:	Part 91: General aviation - Personal		

Analysis

The tandem seat experimental jet aircraft impacted terrain while performing low level aerobatics. Witnesses observed the airplane flying inverted over the pilot's hunting camp just prior to ground impact. No anomalies were found with the airframe or engine during examination of the wreckage. Partial disassembly of the engine revealed that it was operating at the time of the accident. According to radar records and a statement provided by an FAA inspector, the pilot had flown "vigorous" aerobatic flight sequences in a different airplane several hours prior to the accident flight. The two types of aircraft flown on the day of the accident had dissimilar flight envelopes, configurations, sight pictures, and relative speeds. An FAA inspector, who had given the pilot aerobatic instruction in the past, stated that the pilot could have been impaired during the accident flight due to "acute fatigue" from the aerobatic flights he flew earlier on the day of the accident.

Probable Cause and Findings

The National Transportation Safety Board determines the probable cause(s) of this accident to be: the pilot's failure to maintain altitude/clearance from terrain while performing low level aerobatics. A factor was fatigue.

Findings

Occurrence #1: IN FLIGHT COLLISION WITH TERRAIN/WATER
Phase of Operation: MANEUVERING

Findings
1. AEROBATICS - PERFORMED - PILOT IN COMMAND
2. (C) ALTITUDE - LOW
3. (C) ALTITUDE/CLEARANCE - NOT MAINTAINED - PILOT IN COMMAND
4. (F) FATIGUE - PILOT IN COMMAND
5. TERRAIN CONDITION - SWAMPY

Factual Information

HISTORY OF FLIGHT

On February 10, 2001, approximately 1200 central standard time, an Aero Vodochody L-39C experimental single engine jet airplane, N901NL, registered to and operated by Northern Lights Aerobatics USA Inc., of Lafayette, Louisiana, was destroyed upon impact with terrain while maneuvering in the vicinity of Pecan Island, Louisiana. The private pilot and his passenger sustained fatal injuries. Visual meteorological conditions prevailed and a visual flight rules (VFR) flight plan was filed for the 14 Code of Federal Regulations (CFR) Part 91 personal flight. The flight originated from the Lafayette Regional Airport, Lafayette, Louisiana, at 1137.

Several witnesses, located within 1/4 miles of the accident site, observed the tandem-seat jet aircraft maneuvering at low altitude over the pilot's hunting camp for several minutes prior to the accident. They stated that the jet was flying "inverted" prior to ground impact. A few of the witnesses remarked that they observed what they thought to be the pilot attempting to roll upright as the airplane impacted the ground at a high rate of speed.

PERSONNEL INFORMATION

The 40-year old pilot held a private pilot certificate with single-engine land and rotorcraft-helicopter ratings. A review of the pilot's logbook revealed that he had accumulated 2,058 hours, of which 316 were in the L-39C. All of the 316 hours in the L-39C were logged from March 1999 to the date of the accident. Documents were found that indicated that the pilot had been enrolled in a pilot training course for the L-39C during March 1999, conducted at International Jets Inc., Gadsden, Alabama. On March 30, 1999, he received a letter of authorization (LOA) from the FAA which authorized him to act as pilot-in-command in the L-39C. On November 14, 2000, the pilot received his Aerobatic Competency Evaluation (ACE) in the L-39C, with an 800 foot AGL altitude restriction. No "high performance" or "high altitude" endorsements were found in the pilot's records, as required by 14 CFR Parts 61.31(f) and 61.31(g) for the operation of high performance aircraft. The pilot held a valid second-class medical certificate, dated March 4, 1999, with no waivers or limitations. The pilot was reported to be a financial contributor to the Northern Lights Aerobatics Team.

AIRCRAFT INFORMATION

The 1980 model L-39C, serial number 031804, was manufactured in Czechoslovakia and was imported to the United States in 1999. It was powered by an Ivchenko AI-25TL turbo fan engine. The airplane had accumulated a total of 1,000 airframe hours at the time of the accident. Its airworthiness certificate was issued on March 10, 1999, at a total time of 899 hours. Its last inspection was completed on September 28, 2000, at a total time of 930 hours.

The airplane was equipped with a functional ejection seat system. The airplane was primarily utilized by the Northern Lights Aerobatics Team.

WRECKAGE AND IMPACT INFORMATION

The accident site was located in an open marshy field at grid coordinates, North 29 degrees 39 minutes and West 92 degrees and 26 minutes. The field was bordered by medium sized trees and was covered by about 12 inches of water. Upon arrival on-scene, the NTSB investigator-in-charge coordinated with the local sheriff and fish and wildlife representatives to drain the field for access to the main wreckage. The main wreckage was found embedded in a large crater approximately 20 feet in diameter and 15 feet deep. Some of the fuselage could be seen within the crater, however, it was apparent that most of the wreckage was buried. The engine and a portion of the tail section were found atop the forward edge of the crater and displayed severe impact damage. Some evidence of post impact fire was found adjacent to the engine and the forward part of the crater. Continuous draining revealed a linear ground impression about 26 feet long and 12 inches deep that connected to the crater and corresponded to the longitudinal axis of the airplane. The bearing of the ground impressions and wreckage was about 010 degrees magnetic.

Since the airplane was severely fragmented and mostly embedded in the soft terrain, a recent photograph of N901NL was used to match paint chip patterns found in the linear ground impression and crater. The tail position light and blue paint chips were found embedded in the southern tip of the linear impression. Progressing toward the crater, mixes of blue/yellow and blue/yellow/red paint chips were found embedded in the impression. The pattern of the paint chips in the impression correlated to the paint scheme on the top side of the airplane.

Flight control continuity could not be established due to the extent of damage, however, all sections of the airplane and flight control surfaces were found and identified with no unusual anomalies other that impact damage.

MEDICAL AND PATHOLOGICAL INFORMATION

Toxicology tests and an autopsy were not performed due to the condition of the pilot's body.

TESTS AND RESERCH

The Powerplants Group accompanied by the NTSB IIC, partially disassembled and examined the engine at Air Salvage of Dallas, Lancaster, Texas, on February 26, 2001. No pre-impact anomalies were discovered during the examination. Detailed findings of the examination can be found in the Powerplants Group Chairman’s Factual Report.

ADDITIONAL INFORMATION

According to radar records and a statement provided by an FAA inspector, the pilot had flown

"vigorous" aerobatic flight sequences in an Extra 300L type aircraft several hours prior to his accident flight in the L-39. The pilot's logbooks indicated that he had not flown aerobatic maneuvers in the Extra 300L during the eight months prior to the date of the accident. The two types of aircraft flown on the day of the accident had dissimilar flight envelopes, configurations, sight pictures, and relative speeds.

The FAA inspector, who also had given the pilot aerobatic instruction in the past, stated that the pilot could have been impaired during the accident flight due to "acute fatigue" from his aerobatic flights earlier in the morning.

The wreckage was released to the owner's representative on June 22, 2001.

Pilot Information

Certificate:	Private	**Age:**	40,Male
Airplane Rating(s):	Single-engine land	**Seat Occupied:**	Front
Other Aircraft Rating(s):	Helicopter	**Restraint Used:**	
Instrument Rating(s):	None	**Second Pilot Present:**	No
Instructor Rating(s):	None	**Toxicology Performed:**	No
Medical Certification:	Class 2 Valid Medical--no waivers/lim.	**Last FAA Medical Exam:**	March 4, 1999
Occupational Pilot:	No	**Last Flight Review or Equivalent:**	September 2, 1999
Flight Time:	2038 hours (Total, all aircraft), 316 hours (Total, this make and model), 90 hours (Last 90 days, all aircraft)		

Aircraft and Owner/Operator Information

Aircraft Make:	Aero Vodochody	**Registration:**	N901NL
Model/Series:	L-39C	**Aircraft Category:**	Airplane
Year of Manufacture:		**Amateur Built:**	
Airworthiness Certificate:	Experimental (Special)	**Serial Number:**	031804
Landing Gear Type:	Retractable - Tricycle	**Seats:**	2
Date/Type of Last Inspection:	September 29, 2000 Continuous airworthiness	**Certified Max Gross Wt.:**	11848 lbs
Time Since Last Inspection:	90 Hrs	**Engines:**	1 Turbo fan
Airframe Total Time:	899 Hrs as of last inspection	**Engine Manufacturer:**	Ivchenko
ELT:	Installed, not activated	**Engine Model/Series:**	AI-25TL
Registered Owner:	Northern Lights Aerobatics USA Inc.	**Rated Power:**	3792 Lbs thrust
Operator:		**Operating Certificate(s) Held:**	None

Meteorological Information and Flight Plan

Conditions at Accident Site:	Visual (VMC)	**Condition of Light:**	Day
Observation Facility, Elevation:	LFT,125 ft msl	**Distance from Accident Site:**	
Observation Time:	11:53 Local	**Direction from Accident Site:**	
Lowest Cloud Condition:	Clear	**Visibility**	10 miles
Lowest Ceiling:	None	**Visibility (RVR):**	
Wind Speed/Gusts:	15 knots / 19 knots	**Turbulence Type Forecast/Actual:**	/
Wind Direction:	20°	**Turbulence Severity Forecast/Actual:**	/
Altimeter Setting:	30.31 inches Hg	**Temperature/Dew Point:**	6°C / 2°C
Precipitation and Obscuration:	No Obscuration; No Precipitation		
Departure Point:	Lafayette, LA (LFT)	**Type of Flight Plan Filed:**	None
Destination:	(LFT)	**Type of Clearance:**	None
Departure Time:	11:37 Local	**Type of Airspace:**	Class E

Wreckage and Impact Information

Crew Injuries:	1 Fatal	**Aircraft Damage:**	Destroyed
Passenger Injuries:	1 Fatal	**Aircraft Fire:**	None
Ground Injuries:	N/A	**Aircraft Explosion:**	None
Total Injuries:	2 Fatal	**Latitude, Longitude:**	30.375,-92.399444

Administrative Information

Investigator In Charge (IIC):	Lemishko, Alexander
Additional Participating Persons:	Kelly Teague; FAA; Baton Rouge, LA
Original Publish Date:	April 29, 2003
Last Revision Date:	
Investigation Class:	Class
Note:	
Investigation Docket:	https://data.ntsb.gov/Docket?ProjectID=51702