Aviation Investigation Final Report

Location:	Conesus, New York	**Accident Number:**	IAD05LA094
Date & Time:	July 5, 2005, 14:06 Local	**Registration:**	N6028V
Aircraft:	Consolidated Aeronautics Inc. Lake LA-4-200	**Aircraft Damage:**	Substantial
Defining Event:		**Injuries:**	2 Serious
Flight Conducted Under:	Part 91: General aviation - Instructional		

Analysis

The instructor did not obtain a weather briefing prior to the flight. The student pilot took off from the lake in a southerly direction, and turned toward rising terrain to the east at the direction of the instructor. The instructor then suggested a turn back to the south, at which point the student announced that the airplane "would not climb," and transferred control of the airplane to the instructor. The airplane then struck a downward slope on the eastern side of the lake. The nose compartment, cockpit and cabin area were destroyed, and completely exposed. The wings, empennage, and tail were largely intact. Neither pilot remembers any problems with the performance or handling of the airplane, nor any portion of the flight after the transfer of the flight controls. Examination of weather radar data revealed a level 3-4 cell in the vicinity of the accident site around the time of the accident. The engine ran to about 65 percent power in a test cell after the accident, due to deteriorated ignition harnesses, and to 100 percent power after replacement of the harnesses. The engine was manufactured 20 years before the accident, and had never been overhauled. The manufacturer recommended that the engine be overhauled at 2,000 hours or 12 years, whichever occurred first.

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 adequate airspeed, which resulted in an inadvertent stall and collision with terrain.

Findings

Occurrence #1: LOSS OF CONTROL - IN FLIGHT
Phase of Operation: MANEUVERING

Findings
1. WEATHER CONDITION - DOWNDRAFT
2. (C) AIRSPEED - INADEQUATE - PILOT IN COMMAND(CFI)
3. STALL - INADVERTENT - PILOT IN COMMAND(CFI)

Occurrence #2: IN FLIGHT COLLISION WITH TERRAIN/WATER
Phase of Operation: DESCENT - UNCONTROLLED

Findings
4. TERRAIN CONDITION - MOUNTAINOUS/HILLY

Factual Information

HISTORY OF FLIGHT

On July 5, 2005, at 1406 eastern daylight time, a Consolidated Aeronautics Inc. Lake LA-4-200, N6028V, was substantially damaged when it impacted terrain while maneuvering after takeoff from Conesus Lake, Conesus, New York. The certificated flight instructor/owner and student pilot were seriously injured. Visual meteorological conditions prevailed, and no flight plan was filed for the local instructional flight, conducted under 14 CFR Part 91.

Federal Aviation Administration (FAA) aviation safety inspectors interviewed the student pilot at the hospital. The pilot/owner was not immediately available for interview.

According to the student pilot, the flight began with water taxi exercises on the lake. After taxiing back and forth on the lake, the airplane took off to the south with the student pilot at the flight controls. During the climb, he adjusted the throttle, propeller, and the trim settings for a 65-knot airspeed.

The instructor asked the student to turn left to an easterly heading. As there was rising terrain to the east, the instructor then suggested a turn back to the south. At this point the student felt that "the airplane would not climb." The instructor took the flight controls, but the airplane impacted hilly terrain on a downward slope and came to rest against a line of trees.

The student recalled that it was sunny during the course of the flight, and remembered hearing thunder as he climbed the hill in search of assistance. He said it rained shortly after the accident, but cannot recall the amount of time that transpired between the accident and the beginning of rainfall.

The student did not recall any control problems with the aircraft or anomalies with the engine. He did not recall hearing any change in engine power or recall if the pilot made adjustments to the power setting before impact. He did recall that the pilot adjusted the propeller control just before impact.

After recovering from his injuries, the flight instructor said that he could not recall any portion of the flight that took place after the student announced that the airplane would not climb, and he took over the flight controls.

According to a local police report, the responding officer spoke to the flight instructor immediately upon arrival at the scene. The instructor said that the airplane experienced "power failure." Two witnesses reported that when the airplane flew over, it "didn't sound right."

In a telephone interview, a witness stated that he watched the airplane perform several takeoffs and landings to the north, but only heard the airplane on the accident takeoff, as the airplane departed to the south.

The witness said that the takeoffs were at increasingly shallower angles of climb, and that the crosswind turns were at increasingly steeper angles of bank. He further stated that the airplane would "just clear" the treetops during the crosswind climb. He described the takeoffs as "fighter pilot" style, and his wife described them as "hot dog" style.

PERSONNEL INFORMATION

The instructor held an airline transport pilot certificate with ratings for airplane multi-engine land, single engine land, and single engine sea with multiple type ratings. He held a flight instructor certificate with ratings for airplane single engine and multi-engine.

The instructor's most recent FAA first class medical certificate was issued January 3, 2005. He reported 18,800 total hours of flight experience on that date.

The student pilot did not hold an FAA medical certificate.

AIRCRAFT INFORMATION

The airplane was a 1976 Consolidated Aeronautics, Inc. Lake LA-4-200. The airplane had accrued 1,380 total flight hours. It's most recent annual inspection was completed on July 14, 2004. The airplane had accrued 123 flight hours since that date.

Examination of the maintenance logbook revealed that the airplane's most recent maintenance was performed July 1, 2005, and involved the replacement of 2 hydraulic line fittings.

Further examination revealed that compliance for two airworthiness directives, one for a fuel line inspection, the other for an ignition switch inspection, were both 204 hours overdue.

METEOROLOGICAL INFORMATION

At 1354, the weather reported at Dansville Municipal Airport (DSV), eight miles south, included clear skies and variable wind at 6 knots. The temperature was 88 degrees Fahrenheit, and the dew point was 66 degrees Fahrenheit.

The pilot reported that he did not obtain a weather briefing prior to takeoff. He explained that his observations while horseback riding, and motorcycle riding earlier in the day left him confident of the weather for a local flight.

A Safety Board meteorologist reviewed the weather data and satellite imagery for the area

surrounding the accident site, around the time of the accident. The images showed a small (Level 3-4) cell traversing the central part of the lake around the time of the accident.

A medical evacuation helicopter was dispatched to the crash site after the crash, but departed without transporting the injured pilots due to heavy rain in the area.

WRECKAGE AND IMPACT INFORMATION

The airplane was examined and photographed at the site by the FAA inspectors, and all major components were accounted for at the scene. There was no odor of fuel, or evidence of fuel spillage. A fuel measuring stick found in the cockpit was used to measure 17 gallons of fuel in the airplane. Fuel was present throughout the fuel system.

The nose compartment, and cockpit and cabin area were destroyed, and completely exposed. The wings, empennage, and tail were largely intact.

Flight control continuity was established from the cockpit area to the flight control surfaces, except for the rudder; where a control rod was separated by impact at the rudder attach point. The flap control lever was damaged by impact, and the flap setting was estimated at 10 degrees. The landing gear was retracted.

The engine and propeller were mounted on a pylon in a "pusher" configuration, and the pylon was toppled to the airplane's right side. The engine was intact in the nacelle. The propeller was attached and intact, and the propeller blades displayed similar leading edge gouges and chordwise scratches. The upper fuselage skin and upper wing skin was sliced open along the propeller's extended arc.

The engine was rotated by hand, and compression was confirmed on all cylinders using the thumb method. Spark was produced at all spark plug terminal leads, and the fuel pump expelled fuel.

The engine was removed for further examination at the Lycoming Engine Factory, Williamsport, Pennsylvania.

TESTS AND RESEARCH

The engine was placed in a test cell at the Lycoming Engine Factory, Williamsport, Pennsylvania on September 13, 2005. The test cell was computer controlled, and it established pass/fail parameters on a variety of engine speeds, pressures, and temperatures.

The engine started immediately and idled continuously without interruption. The engine speed was increased to 1,800 rpm, when the computer conducted a magneto check. The computer generated a "fail" code that normally produced a computer-generated engine shutdown. The test cell operator canceled the shutdown, and the engine was accelerated to full throttle. The

engine did not obtain the maximum rated power of 2,700 rpm, but peaked at 2,282 rpm.

The engine was shutdown, and an inspection of the ignition leads revealed that the leads from the right magneto harness were deteriorated and oil-soaked. One lead did not match the other three, and one was split due to impact.

The wiring harness was replaced with a slave harness, and the engine started and ran continuously without interruption. The engine failed a second magneto check, and was again accelerated to full throttle. The engine accelerated to 2,700 rpm and ran continuously at that power setting.

The engine was shutdown, and magneto timing was confirmed at 25 degrees before top-dead-center on the left magneto, and 13 degrees before top-dead-center on the right magneto. The manufacturer's recommended timing for both magnetos was 20 degrees before top-dead-center.

Both magnetos were timed to 20 degrees before top-dead-center, and the engine started and ran continuously without interruption. The computer then ran the engine through the entire test cycle without interruption, and with no anomalies or fault codes noted.

ADDITIONAL INFORMATION

The engine was manufactured in 1976 and had accrued 1,380 hours since manufacture. Examination of the engine log revealed that the engine had never been overhauled. The Lycoming Service Instruction 1009AR recommends that the engine be overhauled at 2,000 hours or 12 years, whichever occurs first.

Pilot Information

Certificate:	Airline transport; Flight instructor	**Age:**	51,Male
Airplane Rating(s):	Single-engine land; Single-engine sea; Multi-engine land	**Seat Occupied:**	Right
Other Aircraft Rating(s):	None	**Restraint Used:**	
Instrument Rating(s):	Airplane	**Second Pilot Present:**	
Instructor Rating(s):	Airplane single-engine; Instrument airplane	**Toxicology Performed:**	No
Medical Certification:	Class 1 None	**Last FAA Medical Exam:**	January 1, 2005
Occupational Pilot:		**Last Flight Review or Equivalent:**	March 1, 2005
Flight Time:	18800 hours (Total, all aircraft), 700 hours (Total, this make and model), 17500 hours (Pilot In Command, all aircraft)		

Student pilot Information

Certificate:		**Age:**	
Airplane Rating(s):		**Seat Occupied:**	
Other Aircraft Rating(s):		**Restraint Used:**	
Instrument Rating(s):		**Second Pilot Present:**	
Instructor Rating(s):		**Toxicology Performed:**	No
Medical Certification:		**Last FAA Medical Exam:**	
Occupational Pilot:		**Last Flight Review or Equivalent:**	
Flight Time:			

Aircraft and Owner/Operator Information

Aircraft Make:	Consolidated Aeronautics Inc.	**Registration:**	N6028V
Model/Series:	Lake LA-4-200	**Aircraft Category:**	Airplane
Year of Manufacture:		**Amateur Built:**	
Airworthiness Certificate:	Normal	**Serial Number:**	781
Landing Gear Type:	Retractable - Tricycle; Amphibian	**Seats:**	4
Date/Type of Last Inspection:	July 1, 2004 Annual	**Certified Max Gross Wt.:**	2400 lbs
Time Since Last Inspection:	123 Hrs	**Engines:**	1 Reciprocating
Airframe Total Time:	1380 Hrs at time of accident	**Engine Manufacturer:**	Lycoming
ELT:	Installed, not activated	**Engine Model/Series:**	IO-360-A1B
Registered Owner:	On file	**Rated Power:**	200 Horsepower
Operator:	On file	**Operating Certificate(s) Held:**	None

Meteorological Information and Flight Plan

Conditions at Accident Site:	Visual (VMC)	**Condition of Light:**	
Observation Facility, Elevation:	DSV,662 ft msl	**Distance from Accident Site:**	8 Nautical Miles
Observation Time:	13:54 Local	**Direction from Accident Site:**	180°
Lowest Cloud Condition:	Clear	**Visibility**	10 miles
Lowest Ceiling:	None	**Visibility (RVR):**	
Wind Speed/Gusts:	6 knots / 0 knots	**Turbulence Type Forecast/Actual:**	/
Wind Direction:	0°	**Turbulence Severity Forecast/Actual:**	/
Altimeter Setting:	29.87 inches Hg	**Temperature/Dew Point:**	31°C / 19°C
Precipitation and Obscuration:			
Departure Point:	Conesus, NY (NONE)	**Type of Flight Plan Filed:**	None
Destination:	(NONE)	**Type of Clearance:**	None
Departure Time:		**Type of Airspace:**	

Airport Information

Airport:	Conesus Lake	**Runway Surface Type:**	Water
Airport Elevation:		**Runway Surface Condition:**	Water-calm
Runway Used:	36	**IFR Approach:**	None
Runway Length/Width:		**VFR Approach/Landing:**	None

Wreckage and Impact Information

Crew Injuries:	2 Serious	**Aircraft Damage:**	Substantial
Passenger Injuries:		**Aircraft Fire:**	None
Ground Injuries:	N/A	**Aircraft Explosion:**	None
Total Injuries:	2 Serious	**Latitude, Longitude:**	42.707778,-77.692222

Administrative Information

Investigator In Charge (IIC):	Rayner, Brian
Additional Participating Persons:	Sergio Perez; FAA; Rochester, NY
Original Publish Date:	August 29, 2006
Last Revision Date:	
Investigation Class:	Class
Note:	
Investigation Docket:	https://data.ntsb.gov/Docket?ProjectID=61898