Aviation Investigation Final Report

Location:	Ojai, California	**Accident Number:**	WPR10FA078
Date & Time:	December 10, 2009, 14:30 Local	**Registration:**	N2463K
Aircraft:	Piper PA-38-112	**Aircraft Damage:**	Substantial
Defining Event:	Loss of control in flight	**Injuries:**	2 Fatal
Flight Conducted Under:	Part 91: General aviation - Instructional		

Analysis

The purpose of the flight was for the flight instructor to evaluate the student for a pre-solo training flight. Radar data indicated that the airplane maneuvered in the vicinity of the accident site for 22 to 24 minutes. It then descended from 3,500 feet, at approximately 660 feet per minute, until 2,000 feet was reached and radar coverage was no longer possible. A witness, located at an adjacent school playground, reported that the airplane approached her position at a very low altitude. At the time she thought it was a sailplane, because she did not hear any engine noise. As the airplane approached within 0.5 miles of her position, she heard noises she thought sounded like the pilot was trying to start the engine. She then heard the engine running and the airplane turned toward rising terrain. The engine noise once again stopped and she lost sight of the airplane shortly before it crashed. Documentation of the wreckage indicated that the airplane collided with the terrain in a nearly vertical attitude. A postimpact examination did not reveal any anomalies with the airframe or engine that would have precluded normal operation. The temperature and dew point weather conditions were plotted on a carburetor icing chart, which indicated serious icing at glide power conditions. The loss of engine power, as reported by the witness, was likely due to carburetor icing.

Probable Cause and Findings

The National Transportation Safety Board determines the probable cause(s) of this accident to be: Airspeed was not maintained, which resulted in a loss of control and the airplane entering into a stall/spin to the ground. Contributing to the accident was a loss of engine power due to carburetor icing.

Findings

Aircraft	Airspeed - Not attained/maintained
Aircraft	(general) - Incorrect use/operation
Personnel issues	Aircraft control - Not specified
Environmental issues	Conducive to carburetor icing - Contributed to outcome

Factual Information

History of Flight

Maneuvering	Loss of control in flight (Defining event)
Maneuvering	Simulated/training event

HISTORY OF FLIGHT

On December 10, 2009, approximately 1430 Pacific standard time, a Piper PA-38-112, N2463K, impacted terrain in a nearly vertical attitude following a loss of control while maneuvering near Ojai, California. The flight instructor and the student pilot were both killed. The airplane was registered to, and being operated by, Aviation Pacific, Inc., under the provisions of 14 Code of Federal Regulations Part 91. No flight plan had been filed for the local pre-solo instructional flight. The airplane had departed Camarillo, California, 37 minutes before the accident. Visual meteorological conditions (VMC) prevailed in the vicinity of the accident site.

The accident airplane was cleared for takeoff from the Camarillo airport at 1353. Soon after takeoff, radio contact was established with Naval Air Station Point Mugu for flight following. After initial radio contact, there were no additional communications from the accident airplane.

The first radar contact with the airplane was at 1358, at 1,800 feet mean sea level (msl), as it headed northwest from the Camarillo Airport. The radar data indicated that the airplane maneuvered in the area of Lake Casitas to east of Ojai, for the next 22 to 24 minutes. At approximately 1425, and at 3,500 feet msl, the airplane began a descent at approximately 660 feet per minute. The accident airplane descended below radar coverage at 1427:30, at an altitude of 2,000 feet. The first 911 call, reporting the accident, was received between 1429 and 1430.

A witness, standing on the playground of Mira Monte Elementary School (240 degrees for 2,000 feet from the accident site), said the airplane approached her position in the school yard at a very low altitude. She thought it was a sailplane, because she did not hear any engine noise. She estimated the airplane was approximately 1/2 mile from the school yard when she heard noises she described as "trying to start the engine." The witness said she then heard the engine running as the airplane made a right turn towards the northeast and rising terrain. After it turned, she could again no longer hear any engine sounds. She said she lost sight of it shortly before it struck the ground.

PERSONNEL INFORMATION

The flight instructor, age 51, held a second-class Federal Aviation Administration (FAA) medical certificate, which was issued on May 20, 2008. He held a commercial pilot certificate

and a flight instructor certificate, with ratings in single engine airplane, multiengine airplane, and instrument airplane. His total flight experience was estimated at 1,700 hours by the flight school. The pilot's flight logbook was not available for examination.

The student pilot, age 19, had a first-class FAA medical certificate, which was issued on November 2, 2009. He had accumulated approximately 15 hours of flight experience. The accident flight was in preparation for his first solo flight.

AIRCRAFT INFORMATION

The airplane was a single-engine, propeller-driven, two seat airplane, with dual flight controls, which was manufactured by Piper in 1979. Its maximum takeoff gross weight was 1,670 pounds; its basic empty weight was 1,144 pounds. It was powered by a Lycoming O-235-L2C reciprocating, direct drive, air-cooled, normally aspirated engine, which had a maximum takeoff rating of 118 horsepower at sea level.

A review of the maintenance records indicated that the last annual inspection was performed on January 11, 2009; the last 100-hour inspection was performed on November 27, 2009. The airframe had 4,257 hours on it at the time of the accident. The airplane had two fuel tanks for a total capacity of 32 gallons, of which 30 was usable. Fuel records indicate that at approximately 0938 on the morning of the accident, the airplane was topped off with fuel. Ramp personnel at the Camarillo Airport stated that the flight instructor flew for 1 hour with a student on the morning of the accident. The refueler estimated that when the flight instructor departed for his second flight of the day, he had "around 25 gallons" of fuel onboard.

METEOROLOGICAL INFORMATION

At 1455, the weather conditions at Camarillo Airport (77 feet elevation), Camarillo, located 145 degrees for 18 nautical miles (nm) from the accident site, were as follows: wind 220 degrees at 8 knots; visibility 10 statute miles; cloud condition, overcast at 6,500 feet; temperature 57 degrees Fahrenheit; dew point 43 degrees Fahrenheit; altimeter setting 30.01 inches of Mercury.

Temperature and dew point measurements closer to the accident site were obtained from the APRSWXNET, citizen-operated weather stations. Quality Assurance is done on this data, but it must be noted these are citizen operated, not National Weather Service observations.

1. Location, 1.6 nm at 205 degrees from the accident site, elevation 896 feet: Temperature 57 degrees F., dew point 37 degrees F. at 1433.
2. Location, 9.9 nm at 102 degrees from the accident site, elevation 663 feet: Temperature 57 degrees F., dew point 34 degrees F. at 1429.
3. Location, 7.4 nm at 33 degree from the accident site, elevation 3,400 feet: Temperature 51 degrees F., dew point 38 degrees F. at 1421.

A carburetor icing chart was used with the closest temperatures: temperature 57 degree

Fahrenheit, with a dew point of 37 degrees Fahrenheit. The plotted data point was in the zone of "Serious Icing at Glide Power."

WRECKAGE AND IMPACT INFORMATION

The airplane was found on an asphalt road (elevation 828 feet), on the residential grounds of the Krotona Institute of Theosophy, Ojai. Forty to sixty-foot trees lined the road. The airplane was resting on its nose and the leading edges of its wings. The nose was crushed aft, and the engine was displaced into the cabin. The empennage was bent over in a scorpion like manner. No ground scar was evident, and the airplane came to rest oriented north. All of the airplane's major components were accounted for at the accident site.

The forward cockpit section sustained extensive ground impact damage; the instrument panel was fragmented and found in several sections. Most of the flight instruments, engine instruments, and avionics were destroyed. The left wing leading edge skin exhibited aft and upwards crushing along its entire span. Both the aileron and flap surfaces remained attached to the wing, but sustained impact damage. The right wing exhibited aft crushing of the leading edge skins along most of its span. Both the aileron and flap surfaces sustained impact damage but both remained attached to the wing. Both wing fuel tanks were compromised.

The empennage, vertical stabilizer and horizontal stabilizer, along with their respective flight control surfaces were minimally damaged. The propeller blades exhibited few striations and little mechanical damage; the propeller spinner was crushed aft. The engine case exhibited several cracks, but remained intact. The carburetor was broken in half and its base remained connected to the bottom of the engine.

No evidence of any pre-impact mechanical discrepancies were found with the airplane's airframe or engine that would have prevented normal operation. There was no fire.

MEDICAL AND PATHOLOGICAL INFORMATION

The Ventura County, Medical Examiner-Coroner, performed autopsies on both pilots on December 11, 2009. The cause of death determined for both of the occupants was multiple blunt traumas.

The FAA's Civil Aeromedical Institute (CAMI) in Oklahoma City, Oklahoma, performed toxicology tests on the flight instructor and student pilot. According to CAMI's report on the flight instructor, his blood was tested for carbon monoxide, cyanide and drugs, with negative results. His vitreous was tested for volatiles; no ethanol was detected.

The student pilot's blood was tested for carbon monoxide and cyanide, with negative results. His vitreous was tested for ethanol and his urine was tested for drugs, with negative results.

TESTS AND RESEARCH

Two students from Aviation Pacific flight school were interviewed by an FAA inspector. They both stated that they had flown with the flight instructor many times. Both students stated that while practicing emergency maneuvers [Engine Power Loss in Flight] the flight instructor never had them use carburetor heat because the rpm would remain in the "green arc." In the manufacturer's Pilot Operating Handbook (POH) for the accident airplane under emergency procedures, Engine Power Loss in Flight, it states that carburetor heat shall be on.

Flight instructor Information

Certificate:	Commercial; Flight instructor	**Age:**	51,Male
Airplane Rating(s):	Single-engine land; Multi-engine land	**Seat Occupied:**	Right
Other Aircraft Rating(s):	None	**Restraint Used:**	
Instrument Rating(s):	Airplane	**Second Pilot Present:**	Yes
Instructor Rating(s):	Airplane multi-engine; Airplane single-engine; Instrument airplane	**Toxicology Performed:**	Yes
Medical Certification:	Class 2 Without waivers/limitations	**Last FAA Medical Exam:**	May 20, 2008
Occupational Pilot:	Yes	**Last Flight Review or Equivalent:**	November 15, 2008
Flight Time:	1700 hours (Total, all aircraft), 150 hours (Last 90 days, all aircraft), 50 hours (Last 30 days, all aircraft), 1 hours (Last 24 hours, all aircraft)		

Student pilot Information

Certificate:	Student	**Age:**	19,Male
Airplane Rating(s):	None	**Seat Occupied:**	Left
Other Aircraft Rating(s):	None	**Restraint Used:**	
Instrument Rating(s):	None	**Second Pilot Present:**	Yes
Instructor Rating(s):	None	**Toxicology Performed:**	Yes
Medical Certification:	Class 1 Without waivers/limitations	**Last FAA Medical Exam:**	November 2, 2009
Occupational Pilot:	No	**Last Flight Review or Equivalent:**	
Flight Time:	14 hours (Total, all aircraft), 9 hours (Total, this make and model), 14 hours (Last 90 days, all aircraft), 14 hours (Last 30 days, all aircraft), 1 hours (Last 24 hours, all aircraft)		

Aircraft and Owner/Operator Information

Aircraft Make:	Piper	**Registration:**	N2463K
Model/Series:	PA-38-112	**Aircraft Category:**	Airplane
Year of Manufacture:		**Amateur Built:**	
Airworthiness Certificate:	Normal; Utility	**Serial Number:**	38-79A0647
Landing Gear Type:	Tricycle	**Seats:**	2
Date/Type of Last Inspection:	October 15, 2009 100 hour	**Certified Max Gross Wt.:**	1670 lbs
Time Since Last Inspection:		**Engines:**	1 Reciprocating
Airframe Total Time:	9257 Hrs at time of accident	**Engine Manufacturer:**	LYCOMING
ELT:	Installed, not activated	**Engine Model/Series:**	O-235 SERIES
Registered Owner:	AVIATION PACIFIC INC	**Rated Power:**	115 Horsepower
Operator:	AVIATION PACIFIC INC	**Operating Certificate(s) Held:**	None

Meteorological Information and Flight Plan

Conditions at Accident Site:	Visual (VMC)	**Condition of Light:**	Day
Observation Facility, Elevation:	CMA,77 ft msl	**Distance from Accident Site:**	20 Nautical Miles
Observation Time:	14:55 Local	**Direction from Accident Site:**	140°
Lowest Cloud Condition:	Thin Overcast / 6500 ft AGL	**Visibility**	10 miles
Lowest Ceiling:	Overcast / 6500 ft AGL	**Visibility (RVR):**	
Wind Speed/Gusts:	8 knots /	**Turbulence Type Forecast/Actual:**	/
Wind Direction:	220°	**Turbulence Severity Forecast/Actual:**	/
Altimeter Setting:	30.01 inches Hg	**Temperature/Dew Point:**	14°C / 6°C
Precipitation and Obscuration:	No Obscuration; No Precipitation		
Departure Point:	Camarillo, CA (CMA)	**Type of Flight Plan Filed:**	None
Destination:	Camarillo, CA (CMA)	**Type of Clearance:**	None
Departure Time:	13:53 Local	**Type of Airspace:**	

Wreckage and Impact Information

Crew Injuries:	2 Fatal	**Aircraft Damage:**	Substantial
Passenger Injuries:		**Aircraft Fire:**	None
Ground Injuries:	N/A	**Aircraft Explosion:**	None
Total Injuries:	2 Fatal	**Latitude, Longitude:**	34.436668,-119.269996

Administrative Information

Investigator In Charge (IIC):	Struhsaker, James
Additional Participating Persons:	David Voelker; FAA FSDO; Van Nuys, CA
Original Publish Date:	March 16, 2011
Last Revision Date:	
Investigation Class:	Class
Note:	The NTSB traveled to the scene of this accident.
Investigation Docket:	https://data.ntsb.gov/Docket?ProjectID=75154

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