National Transportation Safety Board

FACTUAL REPORT AVIATION

NTSB ID: WPR09FA385	Aircraft Registration Number: N23750
Occurrence Date: 08/05/2009	Most Critical Injury: Fatal
Occurrence Type: Accident	Investigated By: NTSB

Location/Time

Nearest City/Place	State	Zip Code	Local Time	Time Zone	
Napa	CA	94558	0431	PDT	

Airport Proximity: Off Airport/Airstrip

Distance From Landing Facility: 3

Aircraft Information Summary

Aircraft Manufacturer	Model/Series	Type of Aircraft
CESSNA	182S	Airplane

Revenue Sightseeing Flight: No

Air Medical Transport Flight: No

Narrative

Brief narrative statement of facts, conditions and circumstances pertinent to the accident/incident:

*** Note: NTSB investigators either traveled in support of this investigation or conducted a significant amount of investigative work without any travel, and used data obtained from various sources to prepare this aircraft accident report. ***

HISTORY OF FLIGHT

On August 05, 2009, at 0431 Pacific daylight time, a Cessna 182S, N23750, impacted hilly terrain shortly after departing from Napa County Airport, Napa, California. Sierra Madre Corp. was operating the airplane under the provisions of 14 Code of Federal Regulations Part 91. The commercial pilot, the sole occupant, was killed. The airplane was substantially damaged. The cross-country personal flight was originating from Napa with a planned stop in Bakersfield, California, and final destination of Santa Fe, New Mexico. Instrument meteorological conditions prevailed in the area surrounding the accident site. An instrument flight rules (IFR) flight plan had been filed and a clearance had been issued; the flight plan was never activated.

During a telephone conversation with a Safety Board investigator, the pilot's spouse recalled that they had been planning a trip down to New Mexico. As for the trip's logistics, she stated that she was a timid flyer and therefore, opted to take a commercial flight; the pilot planned to fly the accident airplane, which was based at Napa County Airport. He had flown the airplane on this route about five times prior and usually chose to leave early to avoid any inclement weather. For this flight he planned to land in Bakersfield to refuel and then continue on to Santa Fe, where he would meet his wife later in the day.

After leaving their residence in the San Francisco area, the pilot called his spouse about 0315 reporting that the weather was good. He again telephoned her around 0400, stating that he was at the airplane's hangar and preparing to depart.

According to Federal Aviation Administration (FAA) records, at 1351 the day prior to the accident, the pilot contacted the Prescott Automated Flight Service Station (FSS). He requested to file two IFR flight plans, the first of which was from Napa to Bakersfield, and the latter was from Bakersfield to Santa Fe. He reported a planned departure time of 0430, and a cruising altitude of 7,500 feet at an airspeed of 130 knots. The pilot stated that he thought there was probably going to be "that morning fog IFR getting out of Napa."

He called flight service the day of the accident at 0408 to open his flight plan and request a clearance. During the ensuing conversation, the pilot received an IFR clearance and correctly read back the following: cleared Napa to Bakersfield via the LIZRD3 departure, CROIT transition, on V108 and as filed, climb and maintain 7,000 feet.

A contracting crew was pouring concrete the morning of the accident about 1 mile south of the airport [located about 2 miles west of the accident site].

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Narrative (Continued)

The crew recalled that at about 0430 they witnessed an airplane pass directly over their work site at a very low altitude. They recalled that the area was foggy, but could not determine the height of the cloud layer. They witnessed a fire plume in the distance shortly after the airplane passed over them.

Recorded radar data covering the area of the accident was supplied by the FAA in the form of a National Track Analysis Program (NTAP) printout from Oakland Air Route Traffic Control Center (ARTCC). The radar data was analyzed for time frame and proximity to the anticipated flight track of the airplane en route as dictated in his IFR clearance.

The radar data consisted of approximately equidistant radar returns from 0429:17 to 0430:54, or about 1.5 minutes intervals. The data was consistent with the airplane making a shallow left bank following departure from runway 18R and gradually increasing its altitude towards the east. The target was first identified at a Mode C reported altitude of 100 feet mean sea level (msl). During the proceeding minute, radar returns disclosed a gradual ascent to 1,000 feet msl, corresponding to about 960 feet above ground level (agl). The last two returns show an altitude of 900 feet msl and a slight change of direction to the south. The last radar return was located about 0.5 miles north of the accident site.

The LIZRD 3 departure description for runway 18R is as follows: The pilot is to depart and climb on a 180-degree heading. This heading will lead to the intercept of the Scaggs Island VORTAC radial-127 [located about 6 miles from the departure end of runway 18R], which the pilot is to follow until reaching the LIZRD intersection [located about 10.25 miles south of the runway]. The pilot is to cross the LIZRD intersection at or above 3,000 feet.

The accident occurred during the hours of darkness, with civil twilight beginning at 0546, and sunrise at 0615. According to the United States Naval Observatory astronomical data, at the time of the accident the moon was 12.9 degrees above the horizon on an azimuth of 233 degrees, and was 100 percent illuminated with a full moon occurring on August 5, 2009.

PERSONNEL INFORMATION

A review of the airmen records maintained by the FAA disclosed that the pilot, age 67, held a commercial pilot certificate with airplane ratings for single and multi-engine land. The pilot received his instrument rating in April 2001. His most recent third-class medical was issued on July 22, 2008, with a limitation that he must wear corrective lenses to exercise the privileges of his certificate.

The pilot's personal flight records were found at the accident site; the entirety of the contents could not be read, as they were partially burned. Only one page in the logbook contained flight entries, of which there were six entries dated from January 31, 2009, to August 02, 2009. The entries all indicated the flights originated and terminated in Napa and were conducted in the accident airplane. In pertinent part the entries were as follows:

January 31: Instrument Competency Check, 2 hours (1.8 hours simulated instrument)
March 28: Cross Country, 3.5 hours
April 25: Cross Country, 3.1 hours
May 29: Cross Country, 3.1 hours
June 28: Cross Country, 8.4 hours (0.1 hours actual instrument)
August 02: Instrument Competency Check, 1.8 hours (0.3 hours actual instrument)

The totals at the bottom of the page were recorded as follows (excluding the times listed above):
Night: 28.5 hours
Actual instrument: 28.5 hours
Simulated instrument: 162.1 hours
Total time: 1,080.3 hours

Narrative (Continued)

During an interview with a Safety Board investigator, the pilot's certificated flight instructor (CFI) stated that he had flown with the pilot for the duration of his instrument training (over about 2 years) and continuously since that time. He classified the pilot as being a "brilliant" aviator, and commented that he often flew his airplane with sole reference to instruments. He performed the pilot's instrument competency check a few days prior to the accident. During that time, they thoroughly discussed taking off in instrument meteorological conditions (IMC) at an uncontrolled airport, and specifically the departure procedures the pilot was executing on the day of the accident.

The CFI further recalled that the pilot did not use the autopilot system, but did frequently use his Garmin GPS for backup reference.

AIRCRAFT INFORMATION

The Cessna 182S, serial number 18280452, was manufactured in 1999. The airplane's maintenance logbooks were found by a Safety Board investigator in the pilot's hangar. A review of the logbooks revealed that the most recent annual inspection of the airframe and engine was recorded as being performed on July 07, 2008, at a total time of 1,073.8 hours.

A typed letter was found predominantly placed on top of the logbooks in the airplane's hangar. It was dated August 02, 2009, and was addressed to the airplane's mechanic from the pilot. It stated that he did not fly several days prior because he would have had to depart IFR, which he did not want to do with an airplane that had just undergone an annual inspection.

During an interview with a Safety Board investigator, the airplane's mechanic indicated that he hadn't performed an annual inspection recently. He had agreed with the pilot that he was going to do the annual inspection, but the pilot did not leave him the maintenance logbooks, and therefore, he did not do the maintenance as planned. The pilot had indicated to him that he was not going to fly the airplane.

The pilot's family provided a series of e-mails between the pilot and mechanic, which mainly concerned the annual inspection. On July 20, 2009, the mechanic indicated that he would start the inspection at the end of July. The next day he stated that he "spent time looking over the airplane" and that nothing looked "bad." He further stated that he was "aware of your much anticipated flight of July 30th" and therefore could "confidently say that your airplane will take you where you want to go and bring you home without any problem."

On July 29, 2009, the mechanic e-mailed the pilot that he was "finished with the annual," and that the airplane was "good to go." He asked for the pilot to leave the logbooks in the hangar, to which the pilot replied he would do so, most likely on August 02, 2009, when he had to complete his Instrument Proficiency Check.

METEOROLOGICAL INFORMATION

A routine aviation weather report (METAR) generated by an Automated Surface Observation System (ASOS) in Napa reported that at 0354 there was a broken cloud layer at 600 feet above ground level (agl) with 10 miles visibility. It recorded the temperature at 55 degrees Fahrenheit; dew point 54 degrees Fahrenheit. An updated weather report at 0454 additionally reported a broken cloud layer at 600 feet agl with no temperature/dewpoint spread.

The National Weather Service facility in Monterey, California, provided the archived weather information of the Napa ASOS at the time nearest to the accident (given with 5 minutes between observations). The information disclosed that between 0420 and 0435, there was an overcast cloud layer at 600 feet agl with 10 miles visibility. It recorded the temperature at 55 degrees Fahrenheit; dew point 55 degrees Fahrenheit at the time of the accident.

Pilot Preflight Weather Information

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Narrative (Continued)

According to FAA records, at 0310 the morning of the accident, the pilot contacted Prescott Automated FSS via telephone and requested a standard weather briefing for his two previously filed IFR flight plans. He indicated that he would be departing Napa at 0430 en route to Bakersfield. The briefer stated that the conditions in Napa were clear below 1,200 feet, with a temperature dewpoint spread of 1 degree (12 and 11 degrees Fahrenheit, respectively).

COMMUNICATIONS

No record exists of the pilot, or a pilot using the airplane's registration number, contacting any FSS, Air traffic Control (ATC) tower, or common frequency during the duration of the flight.

WRECKAGE AND IMPACT

Investigators from the Safety Board and Cessna Aircraft Company examined the wreckage while onsite on August 06, 2009. The accident site was located in the Napa Valley hills about 3.25 nautical miles (nm) southeast of the departure end of runway 18R at Napa. The main wreckage was located at an estimated 38 degrees 11.429 minutes north latitude and 122 degrees 14.133 minutes west longitude, at an elevation of about 475 feet msl.

The first identified points of contact consisted of newly cut brush and disrupted dirt in a small ravine making up the far northern end of the debris field at an elevation of 425 feet msl. The area of contact was in a slight ravine between two hills. The ground depressions started at the base of the severed brush and were consistent in size and orientation to that of the landing gear. The ground disturbance continued up to the main wreckage on a magnetic heading of 165 degrees. The debris path was easily identifiable as it was buff in color, starkly contrasting the adjacent black burned ground. The pattern was consistent with the fire not igniting areas where the wreckage had bent/disrupted the dry brush/grass.

The main wreckage came to rest at the perimeter of a vineyard and had been subjected to severe thermal damage. The main wreckage consisted of the inboard right wing, empennage, engine, and the mostly ashen remains of the fuselage. The cabin was completely consumed by fire. The wreckage was partially entangled within the vineyard structure, which included wood posts and wire.

The inboard right wing was located on the left side of the fuselage with the outboard side pointing downslope and nearly parallel to the debris path. The empennage was thermally destroyed up to the aft baggage area. The horizontal and vertical stabilizers, elevators, and rudder did not appear to have been subjected to fire. The leading edge and outboard section of both horizontal stabilizers sustained crush damage; both elevators remained affixed to their respective attach points. The rudder and vertical stabilizer remained intact. The left inboard wing section (77 inches) was entangled in the vineyard structure about 30 feet southwest (right) of the main wreckage. The Cessna representative stated that the flaps were in the "up" position.

Control continuity was established from the empennage control surfaces to the control cables found within the thermally destroyed area of the fuselage. Thereafter, the wreckage was too fragmented to verify continuity to the respective cockpit controls. The cockpit was thermally consumed and imbedded in the firewall.

A detailed wreckage and impact report with accompanying pictures is contained in the public docket for this accident.

MEDICAL AND PATHOLOGICAL INFORMATION

The Forensic Medical Group, Inc., Fairfield, California, completed an autopsy of the pilot, which stated cause of death to be, "blunt force injury (seconds)." It additionally noted the absence of soot in the tracheo-bronchial tree.

The FAA Civil Aeromedical Institute (CAMI) performed toxicological screenings on the pilot. According to CAMI's report (#200900195001) the toxicological findings were negative for carbon monoxide and tested drugs.

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The following was detected in the pilot's specimens: 7 (mg/dL, mg/hg) acetone in the liver, 19 (mg/dL, mg/hg) ethanol in liver, and 10 (mg/dL, mg/hg) isopropanol in the liver. The toxicology report additionally noted evidence of putrefaction in the specimens received.

TESTS AND RESEARCH

Investigators from the Safety Board, Cessna Aircraft Company, and Textron Lycoming examined the wreckage on September 15, 2009, at the facilities of Plain Parts, Pleasant Grove, California.

The powerplant, a Textron Lycoming IO-540-AB1A5, serial number L-26714-48A, was separated from the airframe. All six cylinders remained attached to the crankcase. The engine exhibited no evidence of catastrophic or mechanical malfunction.

When the magneto drive shaft was rotated by hand, the impulse coupling functioned normally and spark was produced at all six towers. The right magneto was intact. When the magneto drive shaft was rotated by hand, the impulse coupling functioned normally and spark was produced on all six towers. The top spark plugs were intact. No damage was observed within the electrode areas. Light gray deposits were observed within the electrode area. The ignition harness was destroyed. The engine was completely disassembled for further examination.

Mechanical continuity was visually established throughout the engine. No evidence of heat distress was observed on any of the rotating and reciprocating components. No evidence of metal contamination was observed within the engine. The rear accessory gears were intact and undamaged. All internal areas of the cylinders exhibited no evidence of internal foreign object ingestion. All of the intake and exhaust valve faces were intact and exhibited normal operational signatures. All six pistons were intact and undamaged. Each piston ring assembly was undamaged and remained free within its respective ring land.

The camshaft was intact and undamaged. Each cam lobe exhibited normal operational signatures. The crankshaft was intact and undamaged. The crankshaft counterweight assemblies remained secure to their respective positions. The crankshaft part number was 13E27628, serial number V53796498.

The propeller remained attached to the crankshaft flange. One of the three propeller blades was separated from the propeller hub. The remaining two propeller blades exhibited chordwise striations, trailing edge "S" bending, torsional twisting, and leading edge damage.

No anomalies were noted with the recovered engine that would have precluded normal operation.

The directional indicator was found within the cockpit remains with the heading bug set at 127 degrees. The vacuum system was found strewn in the debris field. The main and standby vacuum pumps were disassembled and examined. The shear drive shafts were intact; the carbon rotor and vanes were shattered, consistent with impact damage. There was light scoring on the inside housing.

ADDITIONAL INFORMATION

Controlled Flight Into Terrain (CFIT)

On March 1, 2003, the Federal Aviation Administration issued Advisory Circular number 61-134, "General Aviation Controlled Flight Into Terrain Awareness." The circular was issued to the general aviation community to "...emphasize the inherent risk that controlled flight into terrain (CFIT) poses for general aviation (GA) pilots."

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Narrative (Continued)

The circular defines CFIT as a situation which "...occurs when an airworthy aircraft is flown under the control of a qualified pilot, into terrain (water or obstacles) with inadequate awareness on the part of the pilot of the impending collision."

According to the CFIT circular, "situational awareness" is defined as "...when the pilot is aware of what is happening around the pilot's aircraft at all times in both the vertical and horizontal plane. This includes the ability to project the near term status and position of the aircraft in relation to other aircraft, terrain, and other potential hazards."
Updated on May 10 2010 2:25PM

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Landing Facility/Approach Information

Airport Name	Airport ID:	Airport Elevation	Runway Used	Runway Length	Runway Width
Napa County Airport	APC	35 Ft. MSL	N/A		

Runway Surface Type:

Runway Surface Condition:

Approach/Arrival Flown: None

VFR Approach/Landing: None

Aircraft Information

Aircraft Manufacturer	Model/Series	Serial Number
CESSNA	182S	18280452

Airworthiness Certificate(s): Normal

Landing Gear Type: Tricycle

Amateur Built Acft?	Number of Seats:	Certified Max Gross Wt.	Number of Engines:
No	6	2950 LBS	1

Engine Type:	Engine Manufacturer:	Model/Series:	Rated Power:
Reciprocating	LYCOMING	IO-540-AB1A	300 HP

- Aircraft Inspection Information

Type of Last Inspection	Date of Last Inspection	Time Since Last Inspection	Airframe Total Time
Annual	07/2009	Hours	1074 Hours

- Emergency Locator Transmitter (ELT) Information

ELT Installed?/Type	ELT Operated?	ELT Aided in Locating Accident Site?
Yes /	No	No

Owner/Operator Information

Registered Aircraft Owner	Street Address	City	State	Zip Code
SIERRA MADRE FLYING CORP	1490 MARLBOROUGH RD	HILLSBOROUGH	CA	94010-7143

Operator of Aircraft	Street Address	City	State	Zip Code
SIERRA MADRE FLYING CORP	1490 MARLBOROUGH RD	HILLSBOROUGH	CA	94010-7143

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: Personal

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First Pilot Information

Name	City	State	Date of Birth	Age
On File	On File	On File	On File	67

Sex: M | Seat Occupied: Left | Occupational Pilot? No | Certificate Number: On File

Certificate(s): Commercial

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

Rotorcraft/Glider/LTA: None

Instrument Rating(s): Airplane

Instructor Rating(s): None

Current Biennial Flight Review? 08/2009

Medical Cert.: Class 3 | Medical Cert. Status: With Waivers/Limitations | Date of Last Medical Exam: 07/2008

- Flight Time Matrix	All A/C	This Make and Model	Airplane Single Engine	Airplane Mult-Engine	Night	Instrument Actual	Instrument Simulated	Rotorcraft	Glider	Lighter Than Air
Total Time	1080				29	29	162			
Pilot In Command(PIC)										
Instructor										
Instruction Received										
Last 90 Days										
Last 30 Days										
Last 24 Hours										

Seatbelt Used? Unknown | Shoulder Harness Used? Unknown | Toxicology Performed? Yes | Second Pilot? No

Flight Plan/Itinerary

Type of Flight Plan Filed: IFR

Departure Point	State	Airport Identifier	Departure Time	Time Zone
Same as Accident/Incident Location		APC	0429	PDT

Destination	State	Airport Identifier
Bakersfield	CA	BFL

Type of Clearance: IFR

Type of Airspace:

Weather Information

Pilot's Source of Wx Information:

Flight Service Station

National Transportation Safety Board

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Weather Information

WOF ID	Observation Time	Time Zone	WOF Elevation	WOF Distance From Accident Site	Direction From Accident Site
APC	0430	PDT	35 Ft. MSL	3 NM	340 Deg. Mag.

Sky/Lowest Cloud Condition: Clear Ft. AGL

Condition of Light: Night/Bright

Lowest Ceiling: Overcast 600 Ft. AGL

Visibility: 10 SM

Altimeter: 29.99 "Hg

Temperature: 13 °C

Dew Point: 13 °C

Weather Conditions at Accident Site: Instrument Conditions

Wind Direction: 250

Wind Speed: 10

Wind Gusts:

Visibility (RVR): Ft.

Visibility (RVV) SM

Precip and/or Obscuration:

No Obscuration; No Precipitation

Accident Information

Aircraft Damage: Substantial

Aircraft Fire: Ground

Aircraft Explosion None

- 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

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Administrative Information

Investigator-In-Charge (IIC)

Zoe Keliher

Additional Persons Participating in This Accident/Incident Investigation:

Michael O'Kane
Federal Aviation Administration
Sacramento, CA

Mark Platt
Textron Lycoming
Williamsport, PA

Tom Moody
Cessna Aircraft Company
Wichita, KS