



# Aviation Investigation Final Report

<b>Location:</b>	Lebec, California	<b>Accident Number:</b>	WPR15FA147
<b>Date &amp; Time:</b>	April 14, 2015, 08:11 Local	<b>Registration:</b>	N75BH
<b>Aircraft:</b>	ROBERT C. HANSON PITTS S2E	<b>Aircraft Damage:</b>	Destroyed
<b>Defining Event:</b>	Controlled flight into terr/obj (CFIT)	<b>Injuries:</b>	1 Fatal
<b>Flight Conducted Under:</b>	Part 91: General aviation - Personal		

## Analysis

The airline transport pilot was conducting a visual flight rules (VFR) cross-county flight. When he did not check in after a planned stop, the pilot's family reported him overdue, and an ALNOT (alert notice) was issued. The wreckage was located the next day in a remote area. Data retrieved from a handheld GPS unit revealed that, after takeoff, the airplane attained a maximum altitude of 2,500 ft above ground level (agl) and then descended to about 200 ft agl above an interstate. The airplane then turned east as it approached a mountain range. The final portion of the recording identified the airplane in a climbing left turn, starting from about 100 ft agl, climbing to 900 ft agl before descending in a right turn. The airplane impacted mountainous tree-covered terrain on a ridgeline. The wreckage distribution path was about 500 feet long and the airplane was heavily fragmented.

Weather conditions at the departure airport were VFR; however, an AIRMET (Airman's Meteorological Information) for instrument meteorological conditions was in effect for the area at the time of the accident; witnesses reported low clouds in the area on the morning of the accident. No record was found that indicated that the pilot contacted a flight service station for a weather briefing.

A postaccident examination of the airframe and engine revealed no evidence of preimpact mechanical malfunctions or failures that would have precluded normal operation.

It is likely that the pilot encountered adverse weather along the flight route as the airplane approached the mountain range, which forced the pilot to maneuver from his course and change altitude in an attempt to remain in visual conditions. The flight likely encountered instrument meteorological conditions as it continued further into the mountains, and, during the pilot's likely attempted to return to the interstate, he did not maintain sufficient clearance from rising terrain.

## Probable Cause and Findings

The National Transportation Safety Board determines the probable cause(s) of this accident to be:

The pilot's continued visual flight into instrument meteorological conditions, which resulted in his failure to maintain sufficient clearance from rising terrain.

## Findings

<b>Personnel issues</b>	Decision making/judgment - Pilot
<b>Aircraft</b>	Altitude - Not attained/maintained
<b>Environmental issues</b>	Below VFR minima - Contributed to outcome
<b>Personnel issues</b>	Weather planning - Pilot
<b>Personnel issues</b>	Use of medication/drugs - Pilot

## Factual Information

### History of Flight

Enroute-cruise	Controlled flight into terr/obj (CFIT) (Defining event)
----------------	---

On April 14, 2015, about 0811 Pacific daylight time (PDT), an experimental amateur-built Robert C. Hanson Pitts S2E airplane, N75BH, collided with trees and mountainous terrain about 3 miles northeast of Lebec, California. The airline transport pilot, the sole occupant, sustained fatal injuries, and the airplane was destroyed. The airplane was being operated as a visual flight rules (VFR) cross-country personal flight under Title 14 Code of Federal Regulations (CFR) Part 91. Instrument meteorological conditions (IMC) were reported in the area of the accident. The accident flight originated at the Meadows Field Airport (BFL), Bakersfield, California, about 0748, en route to Blythe Airport (BLH), Blythe, California. No flight plan was filed, and there is no record that a weather briefing was obtained.

Family members reported that the pilot recently purchased the airplane, and it was being flown to his home in Missouri when the accident occurred. When the airplane did not arrive in Blythe, a concerned family member notified the Federal Aviation Administration (FAA). The FAA subsequently issued an alert notice (ALNOT) at 1502 Pacific daylight time.

On April 15, about 1000, the airplane's fragmented wreckage was located by a worker in a remote area of a private ranch, about 40 miles south of the Meadows Field Airport.

Witness stated that on the morning of the accident the weather conditions were poor, and there were dark, low clouds in the area. One witness reported seeing an airplane similar to the accident airplane flying low over the interstate, and stated there were low, dense clouds in the area.

### Pilot Information

<b>Certificate:</b>	Airline transport; Commercial; Flight instructor; Private	<b>Age:</b>	36, Male
<b>Airplane Rating(s):</b>	Single-engine land; Multi-engine land	<b>Seat Occupied:</b>	Rear
<b>Other Aircraft Rating(s):</b>	None	<b>Restraint Used:</b>	Unknown
<b>Instrument Rating(s):</b>	Airplane	<b>Second Pilot Present:</b>	No
<b>Instructor Rating(s):</b>	Airplane single-engine; Instrument airplane	<b>Toxicology Performed:</b>	Yes
<b>Medical Certification:</b>	Class 1 With waivers/limitations	<b>Last FAA Medical Exam:</b>	July 1, 2014
<b>Occupational Pilot:</b>	Yes	<b>Last Flight Review or Equivalent:</b>	
<b>Flight Time:</b>	(Estimated) 8236.5 hours (Total, all aircraft), 6.1 hours (Total, this make and model)		

The pilot, age 36, held an airline transport pilot certificate with an airplane multiengine land rating,

commercial pilot certificate, and a flight instructor certificate with a single-engine land rating. He held type ratings in an Airbus A-320, Beechjet BE- 400, Canadair CL-65, Falcon DA-50, Falcon DA-7X, Hawker HS-125, and a Mitsubishi MU-300. His most recent first-class medical was issued July 1, 2014, and identified the limitation that he must wear corrective lenses.

A partial copy of the pilot's logbook was made available for review. The pilot had about 8,200 total flight hours. He had recently purchased the Pitts S2E, N75BH. Logbook records indicate that the pilot had logged 6.2 hours, all dual received time, in a similar Pitts S2E airplane. Two weeks before the accident, the pilot received an endorsement of training in a Pitts S2E that included normal and crosswind taxi, takeoff and landings, and simulated engine out emergency landings.

### Aircraft and Owner/Operator Information

<b>Aircraft Make:</b>	ROBERT C. HANSON	<b>Registration:</b>	N75BH
<b>Model/Series:</b>	PITTS S2E	<b>Aircraft Category:</b>	Airplane
<b>Year of Manufacture:</b>	1987	<b>Amateur Built:</b>	Yes
<b>Airworthiness Certificate:</b>	Experimental (Special)	<b>Serial Number:</b>	1251
<b>Landing Gear Type:</b>	Tailwheel	<b>Seats:</b>	2
<b>Date/Type of Last Inspection:</b>	April 13, 2015 Condition	<b>Certified Max Gross Wt.:</b>	
<b>Time Since Last Inspection:</b>	226 Hrs	<b>Engines:</b>	1 Reciprocating
<b>Airframe Total Time:</b>	as of last inspection	<b>Engine Manufacturer:</b>	Lycoming
<b>ELT:</b>	Not installed	<b>Engine Model/Series:</b>	IO360 SER
<b>Registered Owner:</b>	On file	<b>Rated Power:</b>	168 Horsepower
<b>Operator:</b>	On file	<b>Operating Certificate(s) Held:</b>	None

The two-seat, bi-wing, fixed gear, amateur built airplane was powered by a Lycoming IO-360 engine. A review of the maintenance records revealed that the airplane's most recent conditional inspection was completed on April 13, 2015, at 226.07 tachometer hours. The tachometer was observed at the accident site with a time of 226.09 hours. The Hobbs hour-meter was never observed at the accident site.

## Meteorological Information and Flight Plan

<b>Conditions at Accident Site:</b>	Instrument (IMC)	<b>Condition of Light:</b>	Day
<b>Observation Facility, Elevation:</b>	KSDB, 4521 ft msl	<b>Distance from Accident Site:</b>	10 Nautical Miles
<b>Observation Time:</b>	15:13 Local	<b>Direction from Accident Site:</b>	150°
<b>Lowest Cloud Condition:</b>		<b>Visibility</b>	1 miles
<b>Lowest Ceiling:</b>	Overcast / 200 ft AGL	<b>Visibility (RVR):</b>	
<b>Wind Speed/Gusts:</b>	25 knots / 35 knots	<b>Turbulence Type Forecast/Actual:</b>	/
<b>Wind Direction:</b>	340°	<b>Turbulence Severity Forecast/Actual:</b>	/ N/A
<b>Altimeter Setting:</b>	30.18 inches Hg	<b>Temperature/Dew Point:</b>	6°C / 4°C
<b>Precipitation and Obscuration:</b>	Moderate - None - Mist		
<b>Departure Point:</b>	Bakersfield, CA (KBFL)	<b>Type of Flight Plan Filed:</b>	None
<b>Destination:</b>	Blythe, CA (KBLH)	<b>Type of Clearance:</b>	None
<b>Departure Time:</b>	07:50 Local	<b>Type of Airspace:</b>	Class G

The closest weather reporting facility was Sandberg (KSDB), about 10 miles southeast of the accident site. At 0813, an aviation routine weather report (METAR) reported, in part: Wind from 340 degrees at 25 knots, peak gusts to 35 knots; visibility 1 statute mile; clouds and sky condition, 200 feet overcast; temperature 6 degrees C; dew point 4 degrees C; altimeter 30.18 inHg.

Witnesses located near the accident site, at the time of the accident, reported that weather conditions were much worse than that being reported at the airport. An AIRMET (Airman's Meteorological Information) and current observations indicated marginal visual meteorological conditions (MVMC) to instrument meteorological conditions (IMC) conditions existed prior to departure. There is no record of the pilot obtaining a weather briefing from Lockheed Martin Flight Service.

Additional information can be found in the Weather Study Report in the public docket for this report.

## Wreckage and Impact Information

<b>Crew Injuries:</b>	1 Fatal	<b>Aircraft Damage:</b>	Destroyed
<b>Passenger Injuries:</b>		<b>Aircraft Fire:</b>	None
<b>Ground Injuries:</b>	N/A	<b>Aircraft Explosion:</b>	None
<b>Total Injuries:</b>	1 Fatal	<b>Latitude, Longitude:</b>	34.876667,-118.829444

The airplane impacted mountainous tree covered terrain on an approximate heading of 090 degrees. The first observed impact point were trees on a ridgeline about 4,000 feet mean sea level (msl). At the initial ground impact point, the propeller was mostly buried in terrain; it was about 350 feet from the first

observed point of impact point. The debris field from the first observed point of impact to the main wreckage was about 500 feet.

Portions of the left wing were found in trees, and fragments of wing fabric were scattered down the hillside. The main wreckage, including the cockpit and engine, were in an open field below the ridgeline.

The wreckage was later recovered to a hangar facility in Phoenix, Arizona. Representatives from the National Transportation Safety Board examined the wreckage at the hangar facility on April 17, 2015.

Examination of the wreckage revealed extensive fragmentations of the airplane's structure. The left wing sustained significantly more damage than the right wing. All pieces of the flight control system were identified; the connecting rods were bent and buckled. Outboard portions of each wing tip were accounted for. The wings wooden spar was fragmented, along with portions of the ailerons. Smaller components in the trees were unrecoverable.

The engine separated from the airframe during the accident sequence, and extensive impact related damage was noted throughout. The propeller hub detached from the crankshaft flange; the propeller blades remained primarily intact, the end of one blade was found separated. The propeller blades were bent back with chordwise striations. Engine drive train continuity was established by manually rotating the crankshaft with a rod welded onto the crankshaft. The crankshaft rotated freely, and the valves moved approximately the same amount of lift in firing order.

Examination of the recovered airframe, engine, and system components revealed no evidence of preimpact mechanical malfunction that would have precluded normal operation. Additional examination information can be found in the wreckage examination report with accompanying pictures located in the public docket for this accident.

## **Medical and Pathological Information**

---

An autopsy was performed on the pilot on April 21, 2015, by Kern County Coroner's Office, in Bakersfield. The cause of death was attributed to multiple blunt force trauma.

The FAA Bioaeronautical Forensic Toxicology Laboratory detected ethanol in the muscle (19 mg/hg), but not in the liver. After absorption, ethanol is quickly distributed throughout the body's tissues and fluids fairly uniformly. This is consistent with postmortem production, and it is unlikely that ethanol played a role in the accident.

In addition, pheniramine was detected in the liver. Pheniramine is a sedating antihistamine used in cold and allergy products.

## Additional Information

A Garmin GPSMAP 396 was recovered from the wreckage and was sent to the NTSB Vehicle Recorders Laboratory, Washington, DC, where it was successfully downloaded. Review of the device revealed the airplane's flight path, altitude, and groundspeed.

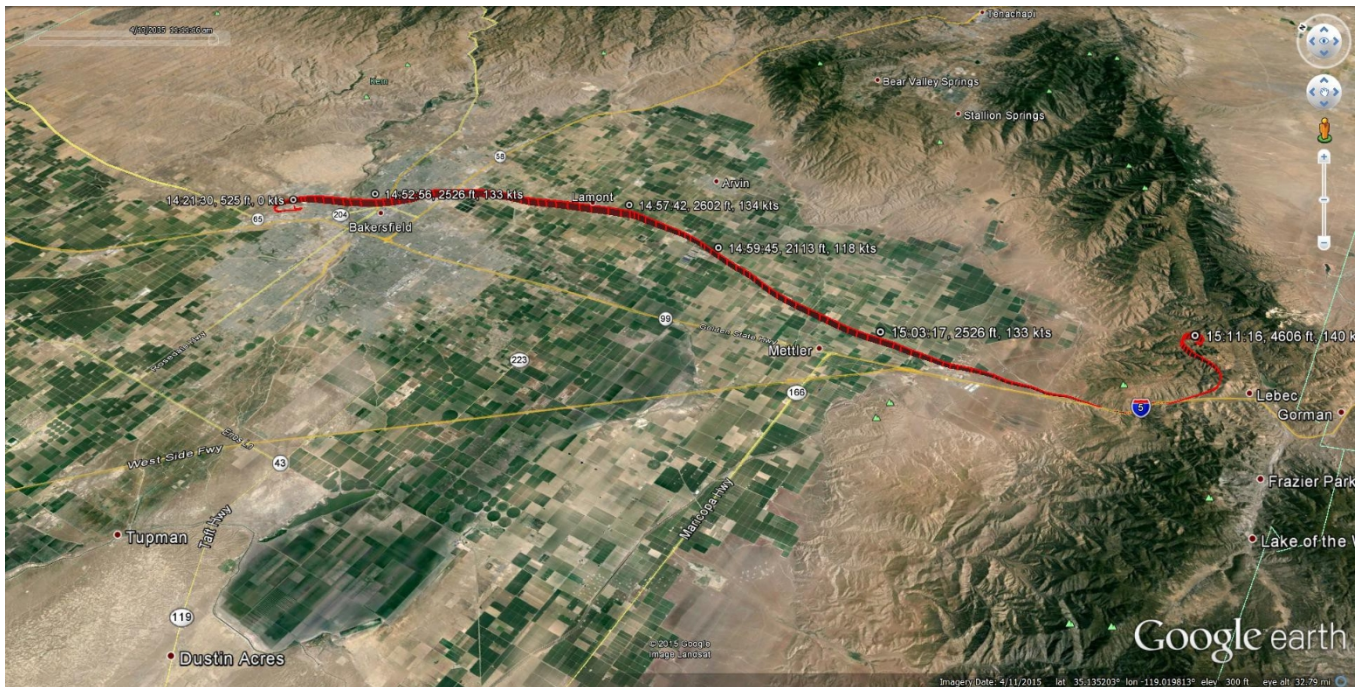


Figure 1. Overlay of flightpath on Google Earth

The data revealed that at 0750 the airplane began its takeoff roll from BFL. The airplane reached a maximum altitude of about 2,500 feet above ground level (agl), until descending over the interstate to about 200 feet agl, before turning east towards the Tehachapi Mountains. The final portion of the recording identified the airplane in a climbing turn, starting from about 100 feet agl, climbing to 900 feet agl before the airplane began a descending right turn before the recording stopped at 0811.

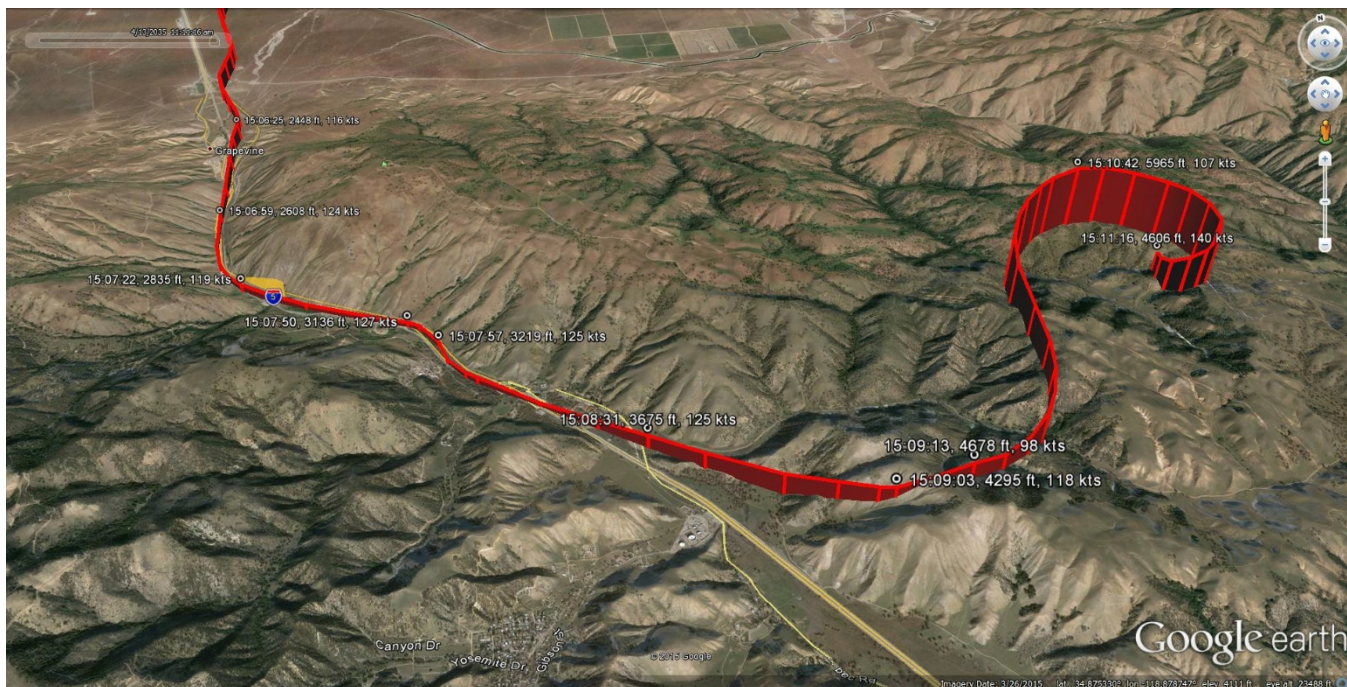


Figure 2. Final portion of flight path

Additional information and all figures can be found in the Electronic Devices Factual Report located in the public docket for this accident.

## Preventing Similar Accidents

### Reduced Visual References Require Vigilance (SA-020)

#### The Problem

About two-thirds of general aviation accidents that occur in reduced visibility weather conditions are fatal. The accidents can involve pilot spatial disorientation or controlled flight into terrain. Even in visual weather conditions, flights at night over areas with limited ground lighting (which provides few visual ground references) can be challenging.

#### What can you do?

- Obtain an official preflight weather briefing, and use all appropriate sources of weather information to make timely in-flight decisions. Other weather sources and in-cockpit weather equipment can supplement official information.
- Refuse to allow external pressures, such as the desire to save time or money or the fear of disappointing passengers, to influence you to attempt or continue a flight in conditions in which you are not comfortable.
- Be honest with yourself about your skill limitations. Plan ahead with cancellation or diversion alternatives. Brief passengers about the alternatives before the flight.
- Seek training to ensure that you are proficient and fully understand the features and limitations of the equipment in your aircraft, particularly how to use all features of the avionics, autopilot systems, and weather information resources.
- Don't allow a situation to become dangerous before deciding to act. Be honest with air traffic controllers about your situation, and explain it to them if you need help.
- Remember that, when flying at night, even visual weather conditions can be challenging. Remote areas with limited ground lighting provide limited visual references cues for pilots, which can be disorienting or render rising terrain visually imperceptible. When planning a night VFR flight, use topographic references to familiarize yourself with surrounding terrain. Consider following instrument procedures if you are instrument rated or avoiding areas with limited ground lighting (such as remote or mountainous areas) if you are not.
- Manage distractions: Many accidents result when a pilot is distracted momentarily from the primary task of flying.

See <https://www.nts.gov/Advocacy/safety-alerts/Documents/SA-020.pdf> for additional resources.

The NTSB presents this information to prevent recurrence of similar accidents. Note that this should not be considered guidance from the regulator, nor does this supersede existing FAA Regulations (FARs).

## Administrative Information

<b>Investigator In Charge (IIC):</b>	Hoidal, Millicent
<b>Additional Participating Persons:</b>	Paul S Penner; FAA; Van Nuys, CA
<b>Original Publish Date:</b>	May 2, 2016
<b>Last Revision Date:</b>	
<b>Investigation Class:</b>	<a href="#">Class</a>
<b>Note:</b>	The NTSB traveled to the scene of this accident.
<b>Investigation Docket:</b>	<a href="https://data.nts.gov/Docket?ProjectID=91033">https://data.nts.gov/Docket?ProjectID=91033</a>

The National Transportation Safety Board (NTSB) is an independent federal agency charged by Congress with investigating every civil aviation accident in the United States and significant events in other modes of transportation—railroad, transit, highway, marine, pipeline, and commercial space. We determine the probable causes of the accidents and events we investigate, and issue safety recommendations aimed at preventing future occurrences. In addition, we conduct transportation safety research studies and offer information and other assistance to family members and survivors for each accident or event we investigate. We also serve as the appellate authority for enforcement actions involving aviation and mariner certificates issued by the Federal Aviation Administration (FAA) and US Coast Guard, and we adjudicate appeals of civil penalty actions taken by the FAA.

The NTSB does not assign fault or blame for an accident or incident; rather, as specified by NTSB regulation, “accident/incident investigations are fact-finding proceedings with no formal issues and no adverse parties ... and are not conducted for the purpose of determining the rights or liabilities of any person” (Title 49 *Code of Federal Regulations* section 831.4). Assignment of fault or legal liability is not relevant to the NTSB’s statutory mission to improve transportation safety by investigating accidents and incidents and issuing safety recommendations. In addition, statutory language prohibits the admission into evidence or use of any part of an NTSB report related to an accident in a civil action for damages resulting from a matter mentioned in the report (Title 49 *United States Code* section 1154(b)). A factual report that may be admissible under 49 *United States Code* section 1154(b) is available [here](#).