



# National Transportation Safety Board Aviation Accident Final Report

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<b>Location:</b>	Floriston, CA	<b>Accident Number:</b>	WPR13FA234
<b>Date &amp; Time:</b>	05/16/2013, 1330 PDT	<b>Registration:</b>	N421W
<b>Aircraft:</b>	CESSNA 421C	<b>Aircraft Damage:</b>	Destroyed
<b>Defining Event:</b>	Loss of control in flight	<b>Injuries:</b>	1 Fatal
<b>Flight Conducted Under:</b>	Part 91: General Aviation - Personal		

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## Analysis

During a cross-country instrument flight rules (IFR) flight, the air traffic controller cleared the pilot to begin his initial descent for landing and issued a heading change to begin the approach. The pilot acknowledged the altitude and heading change. One minute later, the controller noticed that the airplane's radar track was not tracking the assigned heading. The controller queried the pilot as to his intentions, and the pilot replied that he was in a spin. There were no further communications with the pilot. The wreckage was subsequently located in steep mountainous terrain.

A study of the weather indicated widespread cloud cover in the area around the time of the accident. A witness near the accident site reported that he heard an airplane in a dive but could not see it due to the very dark clouds in the area. He heard the engine noise increase and decrease multiple times. It is likely that the pilot entered into the clouds and failed to maintain airplane control. The changes in the engine noise were most likely the result of the pilot's attempt to recover from the spin.

About 8 months before the accident, the pilot completed the initial pilot training course in the accident airplane and was signed off for IFR currency; however, recent or current IFR experience could not be determined.

Examination of the fragmented airplane and engines revealed no abnormalities that would have precluded normal operation.

## 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 airplane control during descent while operating in instrument

meteorological conditions.

## Findings

Personnel issues	Aircraft control - Pilot (Cause)
	Recent instrument experience - Pilot
Environmental issues	Ceiling/visibility/precip - Effect on personnel (Cause)

## Factual Information

### HISTORY OF FLIGHT

On May 16, 2013, about 1330 Pacific daylight time (PDT), a Cessna 421C, N421W, impacted mountainous terrain near Floriston, California. Tri-Wings LLC, was operating the airplane under the provisions of 14 Code of Federal Regulations (CFR) Part 91. The private pilot was fatally injured; the airplane was destroyed by impact forces and a post-crash fire. The cross-country personal flight departed Reid-Hillview Airport (RHV), San Jose, California, at 1237 PDT with a planned destination of Reno, Nevada. Visual meteorological conditions prevailed, and an instrument flight rules (IFR) flight plan had been filed.

While descending into Reno, the pilot was in communication with air traffic controllers (ATC). After departing from 17,000 feet msl and cleared to 11,000 feet, the pilot appeared to veer off the assigned heading of 040 degrees. ATC attempted to verify the pilot's intentions when the pilot advised he was in a spin. There were no further communications with the pilot.

A witness near the accident site heard an airplane, which he could not see due to the dark clouds in the area. He described what he heard as an airplane in a dive, and he could hear the engine noise increase and decrease multiple times. After the airplane noise stopped, he saw a column of black smoke in the area of the accident site.

The accident site was located by US Forest Service personnel in the Toiyabe National Forest about 0.6 miles southwest of the Verdi Peak, at an elevation of 7,957 feet msl.

### PERSONNEL INFORMATION

A review of Federal Aviation Administration (FAA) airman records revealed that the 67-year-old pilot held a private pilot certificate with ratings for airplane single-engine land, multiengine land, and instrument airplane.

The pilot held a third-class medical certificate issued on September 14, 2012. It had the limitations or waivers that the pilot must wear corrective lenses.

No personal flight records were located for the pilot. The aeronautical experience listed in this report was obtained from a review of the FAA airmen medical records on file in the Airman and Medical Records Center located in Oklahoma City, Oklahoma. The pilot reported on his most recent medical application that he had accumulated a total flight time of 1,400 hours.

The wife of the pilot estimated his total flight time at the time of the accident as 1,480 hours, with 79 hours in the Cessna 421 make and model. The pilot had logged about 25 hours in the last 90 days.

The pilot had satisfactorily completed the Cessna 421C initial pilot course from SIMCOM training center on August 31, 2012. The course completion indicated an IFR currency sign off.

No other IFR flight time documentation was recovered between August 13, 2012, and the date of the accident.

The pilot was required to log 25 hours with his Certified Flight Instructor (CFI) prior to insurance coverage for him to act as pilot-in-command. The 25 hours of training was completed and signed of as a visual flight rules (VFR) flight review on September 28, 2012.

### AIRCRAFT INFORMATION

The airplane was a Cessna 421C, serial number 421Co868. No logbooks for the airplane or engines were recovered. Copies of the last annual inspection dated September 12, 2012, were obtained from the maintenance facility who accomplished the inspection. At this time the airplane had a total airframe time of 9,086.2 hours. The tachometer read 211.7 hours.

The left engine was a Continental Motors GTSIO-520-L, serial number 825087-R. Total time recorded on the engine at the last 100-hour inspection was 603.9 hours.

The right engine was a Continental Motors GTSIO-520-L, serial number 825089-R. Total time recorded on the engine at the last 100-hour inspection was 603.9 hours.

#### METEOROLOGICAL CONDITIONS

The closest weather reporting station to the accident site was located at Reno/Tahoe International Airport (elevation 4,415 feet), 15 miles east of the accident site. Nineteen minutes after the accident, the station disseminated a special weather observation report (SPECI); wind from 280 degrees at 12 knots, gusting to 21 knots; 10 miles visibility with broken clouds at 5,500 feet, 10,000 feet, 14,000 feet, and overcast clouds at 18,000 feet; temperature 17 degrees C; dew point 2 degrees C; and an altimeter setting of 29.94 inches of mercury.

An NTSB senior meteorologist completed a weather study for this case. The study indicated wide spread cloud cover in the area during the timeframe of the accident.

A witness in the area of the accident reported very dark clouds, and hearing thunder close by just prior to accident.

#### COMMUNICATIONS

The airplane was in contact with Northern California Terminal Radar Approach Control (TRACON). A transcript of the recorded transmissions between the pilot of N421W and ATC is attached to the accident docket. The following partial transcripts are noted.

At 1247 PDT, N421W was cleared to continue his climb to 15,000 feet.

At 1253 PDT, ATC advised the pilot of reported icing conditions between 13,000 and 16,000 feet.

At 1254 PDT, N421W requests to level off at 13,000 feet. The pilot states "two one whiskey then uh can I level off at one three thousand cause it's kinda clear right here." The request was approved by ATC.

At 1304 PDT, the pilot stated "and norcal golden eagle four two one whiskey I'm getting into a little bit of a cloud area here wondering if I can climb on up to fifteen one five thousand." The request was approved by ATC.

At 1307:31 PDT, ATC re-identified N421W, and requested him to "ident and say altitude." The pilot replied "two one whiskey ident---and we're at one four thousand eight hundred approaching one five thousand." ATC advised that N421W was in radar contact 6 miles northeast of McClellan.

At 1307:45 PDT, N421W stated "two one whiskey and we're kind of between layers here for your feedback."

At 1314 PDT, N421W requested and received clearance to climb to 17,000 feet.

At 1326 PDT, ATC issued a clearance to descend and maintain 13,000 feet.

At 1326 PDT, N421W checked in with NorCal TRACON, and advised that he was descending out of 17,000 for 13,000 feet.

At 1327:09 PDT, ATC issued a radar vector heading 040 degrees, and a descent clearance to 11,000 feet. At 1327:16 PDT, N421W acknowledged the heading and the descent clearance.

At 1328:34 PDT, inquires N421W to verify heading of 040-degrees.

At 1328:38 PDT, the pilot replied "uh two one whiskey negative."

At 1328:40 PDT, ATC queried N421W as to his intentions. No reply was heard.

ATC attempted to contact N421W, and coordinated with other controllers. ATC made a comment to another controller "yeah four two one whiskey point out I'm not sure what he is doing there he's maneuvering in a circle I'm not talking to him anymore."

At 1329:12 PDT, N421W transmits "four two one whiskey's in a spin"

At 1329:20 PDT, N421W transmitted "spin"

The last identified transmission from N421W was at 1329:24 PDT, "two one whiskey's in a spin."

#### WRECKAGE AND IMPACT INFORMATION

Investigators documented the accident site on May 17 and 18, 2013. The wreckage was recovered on May 18, 2013, for further examination.

The accident site was a near vertical shale rock face. The first identified point of contact (FIPC) was airplane debris towards the top of the rock face. The debris path was along a magnetic heading of 040 degrees. The orientation of the fuselage was 220 degrees. The debris field was about 70 yards in length from the top of the hill down to the bottom. Some heavy objects of the airplane were located farther down the hillside.

#### MEDICAL AND PATHOLOGICAL INFORMATION

The Sierra County Coroner completed an autopsy on May 20, 2013. The cause of death was listed as blunt force trauma.

The FAA Civil Aerospace Medical Institute (CAMI), Oklahoma City, performed toxicological testing of specimens of the pilot.

Analysis of the specimens for the pilot contained no findings for tested drugs. They did not perform tests for carbon monoxide or cyanide.

The report contained the following findings for volatiles: 18 (mg/dL, mg/hg) ethanol detected in muscle; 10 (mg/dL, mg/hg) ethanol detected in kidney.

#### TESTS AND RESEARCH

Examination of the recovered airframe and engines was conducted on May 19, 2013, at the facilities of Airlift Helicopters, Inc., Reno. No evidence of preimpact mechanical malfunction was noted during the examination of the recovered airframe and engines.

A majority of the fuselage from the nose to the aft pressure bulkhead was consumed. The empennage was found partially separated from the fuselage at the aft pressure bulkhead. Pieces of windshield were found at the initial impact point. Based on actuator position, the landing gear was retracted.

No soot streaking was observed on either side of the empennage.

No soot streaking was noted on the main landing gear doors, a recovered nacelle baggage door, an upper engine cowling, or the right nacelle rear fairing.

The cabin interior was consumed by the post-impact fire. All of the seats were separated from the floor and a majority of the seats were in multiple pieces. Portions of instruments and switches were found in the debris field. Four air driven gyro rotors were found in the wreckage and examined. Two of the rotors were found separated from their instruments. The left side attitude indicator and HSI were found crushed. The left side attitude indicator display appeared to indicate a wings level attitude. The rotors were removed from the attitude indicator and the HSI. Both rotors and their housing exhibited rotation scoring. Seat belt use could not be determined. None of the recovered instruments could be read.

All of the flight controls were found at the accident site. Both ailerons were separated from the wings. A majority of the flaps remained attached to the wings. The elevators remained attached. The rudder was attached with the exception of the rudder cap which was found at the initial impact site.

A majority of the fuel system was consumed by the post-impact fire. Both fuel strainers were clean.

The propeller blades were labeled "A" thru "F". All of the blades had separated from their hubs and the hubs were in multiple pieces. None of the recovered hub pieces contained serial number stamps.

All of the blades exhibited "S" bending with blades "A", "B", "D", and "F" exhibited tip curling. The airframe and engine examination report is attached to the accident docket.

## History of Flight

Enroute-descent	Loss of control in flight (Defining event)
Uncontrolled descent	Collision with terr/obj (non-CFIT)

## Pilot Information

Certificate:	Private	Age:	67
Airplane Rating(s):	Multi-engine Land; Single-engine Land	Seat Occupied:	Unknown
Other Aircraft Rating(s):	None	Restraint Used:	
Instrument Rating(s):	Airplane	Second Pilot Present:	No
Instructor Rating(s):	None	Toxicology Performed:	Yes
Medical Certification:	Class 3 With Waivers/Limitations	Last FAA Medical Exam:	09/14/2012
Occupational Pilot:	No	Last Flight Review or Equivalent:	09/28/2012
Flight Time:	1480 hours (Total, all aircraft), 79 hours (Total, this make and model)		

## Aircraft and Owner/Operator Information

Aircraft Make:	CESSNA	Registration:	N421W
Model/Series:	421C	Aircraft Category:	Airplane
Year of Manufacture:		Amateur Built:	No
Airworthiness Certificate:	Normal	Serial Number:	421C0868
Landing Gear Type:	Retractable - Tricycle	Seats:	8
Date/Type of Last Inspection:	09/12/2012, Annual	Certified Max Gross Wt.:	7610 lbs
Time Since Last Inspection:		Engines:	2 Reciprocating
Airframe Total Time:	9086.2 Hours as of last inspection	Engine Manufacturer:	CONT MOTOR
ELT:	Installed, not activated	Engine Model/Series:	GTSIO-520-L
Registered Owner:	Tri-Wings LLC	Rated Power:	375 hp
Operator:	On file	Operating Certificate(s) Held:	None

## Meteorological Information and Flight Plan

Conditions at Accident Site:	Visual Conditions	Condition of Light:	Day
Observation Facility, Elevation:	KRNO, 4415 ft msl	Distance from Accident Site:	14 Nautical Miles
Observation Time:	2049 UTC	Direction from Accident Site:	80°
Lowest Cloud Condition:		Visibility	10 Miles
Lowest Ceiling:	Broken / 5500 ft agl	Visibility (RVR):	
Wind Speed/Gusts:	12 knots / 21 knots	Turbulence Type Forecast/Actual:	/
Wind Direction:	280°	Turbulence Severity Forecast/Actual:	/
Altimeter Setting:	29.94 inches Hg	Temperature/Dew Point:	17° C / 2° C
Precipitation and Obscuration:	No Obscuration; No Precipitation		
Departure Point:	Reid- Hillview, CA (RHV)	Type of Flight Plan Filed:	IFR
Destination:	Reno, NV (RNO)	Type of Clearance:	IFR
Departure Time:	1237 PDT	Type of Airspace:	

## Airport Information

Airport:	RENO/TAHOE INTL (RNO)	Runway Surface Type:	N/A
Airport Elevation:	4415 ft	Runway Surface Condition:	
Runway Used:	N/A	IFR Approach:	None
Runway Length/Width:		VFR Approach/Landing:	None

## Wreckage and Impact Information

<b>Crew Injuries:</b>	1 Fatal	<b>Aircraft Damage:</b>	Destroyed
<b>Passenger Injuries:</b>	N/A	<b>Aircraft Fire:</b>	On-Ground
<b>Ground Injuries:</b>	N/A	<b>Aircraft Explosion:</b>	On-Ground
<b>Total Injuries:</b>	1 Fatal	<b>Latitude, Longitude:</b>	39.466111, -120.047778

## Administrative Information

<b>Investigator In Charge (IIC):</b>	Patrick H Jones	<b>Report Date:</b>	06/18/2015
<b>Additional Participating Persons:</b>	Harry R Smith; Federal Aviation Administration FSDO; Reno, NV Kurt Gibson; Continental Motors, Inc.; Mobile, AL Henry Soderlund; Cessna Aircraft Company; Wichita, KS		
<b>Publish Date:</b>	06/18/2015		
<b>Note:</b>	The NTSB traveled to the scene of this accident.		
<b>Investigation Docket:</b>	<a href="http://dms.nts.gov/pubdms/search/dockList.cfm?mKey=86914">http://dms.nts.gov/pubdms/search/dockList.cfm?mKey=86914</a>		

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The Independent Safety Board Act, as codified at 49 U.S.C. Section 1154(b), precludes the admission into evidence or use of any part of an NTSB report related to an incident or accident in a civil action for damages resulting from a matter mentioned in the report. A factual report that may be admissible under 49 U.S.C. § 1154(b) is available [here](#).