Aviation Investigation Final Report

Location:	Escondido, California	**Accident Number:**	LAX01FA194
Date & Time:	May 28, 2001, 11:49 Local	**Registration:**	N9462X
Aircraft:	Cessna 210A	**Aircraft Damage:**	Destroyed
Defining Event:		**Injuries:**	3 Fatal
Flight Conducted Under:	Part 91: General aviation - Personal		

Analysis

The airplane departed the Ramona airport approximately 1140. It was radar identified by the air traffic controller, who then instructed the pilot to climb and maintain 6,000 feet msl. The controller told the pilot to make a left turn and proceed to the Oceanside VOR. The pilot acknowledged the instructions. The airplane then made a right turn to a heading of approximately 040 degrees at 4,300 feet msl. The controller requested that the pilot fly a heading of 270 degrees and to climb to 7,000 feet msl. The pilot acknowledged the radar vector. The airplane then made a steep 320-degree turn to the left, stopping on a heading of approximately 360 degrees at an altitude of 4,800 feet msl. The controller asked the pilot to continue his right turn to a heading of 290 degrees for radar vectors to victor airway 186. Then the controller asked the pilot to say altitude. A response from another pilot onboard the airplane said, "standby, we're in a little trouble here." The controller made two subsequent calls to the accident airplane. The pilot-in-command replied, "uh, six two x-ray standby a second." The controller issued a warning that the airplane was heading for higher terrain and instructed the pilot to turn left and climb. There was no response from the pilot. The airplane began a steep left turn from an altitude of 4,700 feet msl and turned left to a heading of approximately 180 degrees, descending from 4,700 feet msl to 2,500 feet msl, and then back up to 3,100 feet msl. At 1148:39, radar contact was lost with the airplane. According to the pilot's logbook, he had logged a total of 12.6 hours in 1999, 5.6 hours in 2000, and 11.5 hours in 2001. For the 3 years indicated, he had logged a total of 0.7 hours in instrument meteorological conditions. There was no evidence of an instrument proficiency check having been completed within the 12 calendar months prior to the accident. No instrument flight experience had been logged within the 12 calendar months preceding the accident.

Probable Cause and Findings

The National Transportation Safety Board determines the probable cause(s) of this accident to be: the pilot's spatial disorientation and lack of instrument flight proficiency that resulted in a loss of directional control and the airplane's subsequent in-flight collision with the ground.

Findings

Occurrence #1: LOSS OF CONTROL - IN FLIGHT
Phase of Operation: CLIMB - TO CRUISE

Findings
1. (F) WEATHER CONDITION - CLOUDS
2. (C) DIRECTIONAL CONTROL - NOT MAINTAINED - PILOT IN COMMAND
3. (C) SPATIAL DISORIENTATION - PILOT IN COMMAND
4. (C) LACK OF RECENT INSTRUMENT TIME - PILOT IN COMMAND

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

Findings
5. TERRAIN CONDITION - MOUNTAINOUS/HILLY
6. REASON FOR OCCURRENCE UNDETERMINED

Factual Information

HISTORY OF FLIGHT

On May 28, 2001, at 1149 hours Pacific daylight time, a Cessna 210A, N9462X, was destroyed when it crashed in hilly terrain 5 miles east of Escondido, California. The commercial pilot and two passengers were fatally injured. Instrument meteorological conditions prevailed at the time of the accident. The flight was conducted by the owner under 14 CFR Part 91. The airplane departed Ramona, California, on an IFR flight plan and clearance to Fresno, California. The flight plan was activated upon departure at Ramona.

The pilot had flown with his son, a designated pilot examiner for the Federal Aviation Administration (FAA), on May 25, 2001, for the purpose of a flight review. The son stated that he asked his father to do several maneuvers, including steep turns, a simulated engine failure, and basic air work. According to the son, the pilot performed to the standards for a commercial pilot or better for the flight review, which he subsequently endorsed in the pilot's logbook. He stated that they did not perform any instrument maneuvers during the flight, which are not required for a flight review.

On May 28, 2001, at 1032, the pilot received a weather briefing from the San Diego Automated Flight Service Station. During the briefing, the pilot was informed that the tops of the overcast along his intended route of flight were between 5,500 feet mean sea level (msl) and 6,000 feet msl, and were expected to remain so for the duration of the day. The pilot then filed an IFR flight plan from Ramona to Fresno. While filing the flight plan, the pilot stated that he had approximately 5 hours of fuel on board. The pilot also positively identified himself by name. At 1134, the pilot received an IFR clearance from the Ramona to Fresno by a controller from the SOCAL radar facility. The clearance was as follows: Cleared to Fresno airport via Ramona departure, bondo, victor 208, as filed. Climb and maintain five thousand, expect one zero thousand ten minutes after departure. Squawk code one zero one six, departure frequency one two seven point three. Time now one eight three four and a half. Void if not off by forty five. If not off by forty five, call us by fifty and advise of your intentions.

According to the radar data and communications transcripts obtained from the Southern California Terminal Radar Approach Control, San Diego Palomar Associate position, the following events occurred: The airplane departed the Ramona airport approximately 1140. A radar target that was displaying a discrete transponder code that was assigned to the accident aircraft was observed on radar at 1140:17. The target was heading approximately 310 degrees and was at an altitude of 2000 feet msl. The target was observed to continue a climb on a heading of 310 degrees. An air traffic controller made three calls for N9462X before establishing communications at 1144:03. The accident airplane was radar identified by the controller at 1144:12, who then instructed the pilot to climb and maintain 6,000 feet msl. At

that time the airplane was passing through 4,100 feet msl. At 1144:57, the controller told the pilot to make a left turn and proceed to the Oceanside VOR. At 1145:02, the pilot acknowledged the instructions. The airplane was then observed making a right turn to a heading of approximately 040 degrees and was at 4,300 feet msl. At 1145;06, the controller requested that the pilot fly a heading of 270 degrees for radar vectors and to climb to 7,000 feet msl. At 1145:16, the pilot acknowledged the radar vector. The airplane then made a steep 320-degree turn to the left, stopping on a heading of approximately 360 degrees at an altitude of 4,800 feet msl. At 1145:47, the controller asked the pilot to continue his right turn to a heading of 290 degrees for radar vectors to victor airway 186. At 1146:24, the controller asked the pilot to say altitude. At 1146:26, a response from another pilot onboard the airplane, identified by family members, said, "standby, we're in a little trouble here." The controller made two subsequent calls to the accident airplane. At 1146:39, the pilot-in-command replied, "uh, six two x-ray standby a second." At 1146:56, the controller issued a warning that the airplane was heading for higher terrain and instructed the pilot to turn left to a heading of 270 degrees and climb. There was no response from the pilot. At 1147:17, the airplane began a steep left turn from an altitude of 4,700 feet msl. The airplane was observed turning left to a heading of approximately 180 degrees and descending from 4,700 feet msl to 2,500 feet msl, and then back up to 3,100 feet msl. At 1148:39, radar contact was lost with the airplane.

PERSONNEL INFORMATION

A review of the Federal Aviation Administration airman records revealed that the pilot held a commercial pilot certificate with airplane single engine land and instrument airplane ratings. He also held a private pilot certificate with a single engine sea rating. The pilot held a second-class medical certificate, with a limitation requiring corrective lenses be worn while acting as pilot-in-command, issued on May 15, 2001. According to the pilot's logbook, he had logged a total of 12.6 hours in 1999, 5.6 hours in 2000, and 11.5 hours in 2001. For the 3 years indicated, he had logged a total of 0.7 hours in instrument meteorological conditions. There was no evidence of an instrument proficiency check having been completed within the 12 calendar months prior to the accident. No instrument flight experience had been logged within the 12 calendar months preceding the accident. A second pilot was onboard as a passenger. He had a private pilot certificate with an airplane single engine land rating. The second pilot did not have an instrument rating.

AIRCRAFT INFORMATION

The aircraft was a 1961 Cessna 210A, serial number 21057762. A review of the airplane logbooks revealed that an annual inspection was completed on April 26, 2001, at a total airframe time of 5,552 hours. A 50-hour inspection was accomplished on May 25, 2001, at a total airframe time of 5,603 hours. The airplane had a Teledyne Continental IO-470-E, serial number 088742R, engine installed. The total time on the engine at the last annual was 1,460 hours since major overhaul. A 50-hour inspection was completed on May 25, 2001, at a total engine time of 1,511 hours since major overhaul. The pitot static system and transponder inspection and certification was completed on September 27, 2000.

METEOROLOGICAL INFORMATION

The Ramona airport is equipped with an automatic weather observation system (AWOS). The AWOS was reporting the weather conditions at 11:53 as follows: Wind was from 280 degrees at 9 knots with a visibility of 6 statute miles in mist. There was a broken cloud layer at 800 feet above ground level (agl) and an overcast layer at 1,400 feet agl. The temperature was 14 degrees Celsius with a dew point of 12 degrees Celsius. The barometric pressure was 29.93 inches of mercury. A remark noted that the ceiling was variable between 500 and 1,100 feet agl. A pilot report issued at 09:02 indicated that the cloud tops were 5,300 feet msl over the Carlsbad airport (CRQ), 15 miles from the accident site on a magnetic bearing of 240 degrees.

WRECKAGE AND IMPACT INFORMATION

The wreckage was located in hilly terrain at an elevation of approximately 2,400 feet msl. The area was characterized by dense brush with scattered outcroppings of granite. Immediately adjacent to the impact site was an avocado grove with trees about 25 feet in height. There was a fence separating the open field where the impact crater was located and the avocado grove. Several homes were located throughout the area. Tall bushes surrounded the west side of the impact crater. There were several disturbed branches visible immediately adjacent to the crater. The damaged branches sloped at a 30-degree angle from left to right as seen when facing east toward the wreckage. There was no discernable cabin area visible. The aft fuselage was also destroyed beyond the point of recognition. The left horizontal stabilizer was still attached to the empennage and was destroyed. The left elevator was found resting 3 feet from the impact crater on a magnetic bearing of 080 degrees. The outboard half of the elevator was crushed back to the rear spar. The right horizontal stabilizer and elevator was still attached to the empennage and was destroyed. The left wing was found 150 feet away on a magnetic bearing of 097 degrees, and was resting against a fence. Several vertical rungs of the fence were damaged and a portion of the fence was pushed over. The left wing leading edge exhibited hydraulic deformation. The left wing flap appeared to be up, and the flap actuator push rod was retracted within the wing structure. The left aileron and wing strut had separated and was found 55 feet from the initial impact crater on a magnetic bearing of 083 degrees. The right wing was found 5 feet from the initial impact crater on a magnetic bearing of 150 degrees. It also exhibited hydraulic deformation of the leading edge. The fuel bladder was not present within the wing and was found in numerous pieces scattered in the vegetation surrounding the site. The right wing flap appeared to be up. The right aileron was destroyed. Small pieces of thick green glass was found embedded in the soil 5 feet from the impact crater on a magnetic bearing of 153 degrees. A propeller blade was found 30 feet from the impact crater on a magnetic bearing of 090 degrees. The blade was separated from the propeller hub, and the base of the blade was fractured in an irregular pattern. One of the propeller flange mounting bolts was still attached. The blade exhibited chordwise scratching and the tip was broken off. Another propeller blade was found 20 feet from the crater on a bearing of 088 degrees, and was still attached to the propeller hub. The hub was separated from the crankshaft. The largest identifiable components were the engine and the vertical stabilizer,

and they were found resting 100 feet from the impact crater on a magnetic bearing of 100 degrees. The engine was found resting next to the vertical stabilizer and aft empennage structure. The vertical stabilizer was whole, standing upright, and still attached to the empennage structure. The vegetation surrounding the accident site exhibited a white powdery residue and had an odor similar to aviation fuel. The airplane's battery, which was located in the aft fuselage, was found 300 feet away from the impact crater on a magnetic bearing of 100 degrees. A straight line from the crater to the battery traversed 200 feet of avocado trees.

MEDICAL AND PATHOLOGICAL INFORMATION

The San Diego County Coroner's Office was unable to perform a post mortem examination of the pilot. Toxicological samples were not available.

TESTS AND RESEARCH

The engine was examined. Compression and internal continuity could not be established. Damage to the front cylinders and bending of the crankshaft prevented rotation of the engine. The top spark plugs were removed. The plugs exhibited a gray coloration and the electrodes were circular and intact, with the exception of the number 6 plug, which was destroyed. According to the Champion Spark Plug Chart, the color displayed by the spark plugs indicated normal engine operation. The cylinders were examined using a lighted borescope. The cylinder walls were smooth and showed no signs of scoring or gouging. The piston heads displayed a light brown color and were not damaged. The exhaust and intake valves were located and identified for each cylinder and were found to be in place and undamaged. The ignition key was found in the ignition switch and the switch was in the "both" position. The vacuum pump was removed and inspected. The pump vanes were clean and undamaged. The pump rotated with minimal effort throughout 3/4 of it's travel. The interior walls of the pump were clean and smooth, with no evidence of scoring or gouging. No metal fragments or shavings were found inside the vacuum pump housing. The magnetos were destroyed. Rotational damage was observed in the aluminum baffle material located directly behind the alternator. The main gear actuators were examined. The notches, or teeth, on the main gear actuator were measured and determined to be in the gear up position. The nose gear actuator arm was disassembled and the rod end was measured. It was determined that the actuator was in the gear up position. Control continuity was established. No instrument readings could be obtained. The gyro rotors for the attitude indicator and heading indicator were examined. Both rotors exhibited rotational damage and scoring. The pilot seat was examined. The seat position locking pin was bent. No seat tracks could be found with position holes to examine.

ADDITIONAL INFORMATION

On September 21, 2001, the wreckage was released to the owner's representative.

Pilot Information

Certificate:	Commercial	**Age:**	77,Male
Airplane Rating(s):	Single-engine land; Single-engine sea	**Seat Occupied:**	Left
Other Aircraft Rating(s):	None	**Restraint Used:**	
Instrument Rating(s):	Airplane	**Second Pilot Present:**	Yes
Instructor Rating(s):	None	**Toxicology Performed:**	No
Medical Certification:	Class 2 Valid Medical--w/ waivers/lim	**Last FAA Medical Exam:**	February 15, 2001
Occupational Pilot:	No	**Last Flight Review or Equivalent:**	May 25, 2001
Flight Time:	3900 hours (Total, all aircraft), 10 hours (Last 90 days, all aircraft), 3 hours (Last 30 days, all aircraft)		

Information

Certificate:	Private	**Age:**	48,Male
Airplane Rating(s):	Single-engine land	**Seat Occupied:**	Right
Other Aircraft Rating(s):	None	**Restraint Used:**	
Instrument Rating(s):	None	**Second Pilot Present:**	Yes
Instructor Rating(s):	None	**Toxicology Performed:**	No
Medical Certification:	Class 3 None	**Last FAA Medical Exam:**	April 7, 1998
Occupational Pilot:	No	**Last Flight Review or Equivalent:**	
Flight Time:			

Aircraft and Owner/Operator Information

Aircraft Make:	Cessna	**Registration:**	N9462X
Model/Series:	210A	**Aircraft Category:**	Airplane
Year of Manufacture:		**Amateur Built:**	
Airworthiness Certificate:	Normal; Utility	**Serial Number:**	21057762
Landing Gear Type:	Retractable - Tricycle	**Seats:**	4
Date/Type of Last Inspection:	April 26, 2001 Annual	**Certified Max Gross Wt.:**	2900 lbs
Time Since Last Inspection:	51 Hrs	**Engines:**	1 Reciprocating
Airframe Total Time:	5603 Hrs as of last inspection	**Engine Manufacturer:**	Continental
ELT:	Installed, not activated	**Engine Model/Series:**	IO-470 E
Registered Owner:	On file	**Rated Power:**	260 Horsepower
Operator:	On file	**Operating Certificate(s) Held:**	None

Meteorological Information and Flight Plan

Conditions at Accident Site:	Instrument (IMC)	**Condition of Light:**	Day
Observation Facility, Elevation:	RMN,1393 ft msl	**Distance from Accident Site:**	8 Nautical Miles
Observation Time:	18:53 Local	**Direction from Accident Site:**	150°
Lowest Cloud Condition:		**Visibility**	6 miles
Lowest Ceiling:	Broken / 800 ft AGL	**Visibility (RVR):**	
Wind Speed/Gusts:	9 knots / 0 knots	**Turbulence Type Forecast/Actual:**	/
Wind Direction:	280°	**Turbulence Severity Forecast/Actual:**	/
Altimeter Setting:	29.93 inches Hg	**Temperature/Dew Point:**	14°C / 12°C
Precipitation and Obscuration:	No Obscuration; No Precipitation		
Departure Point:	Ramona, CA (RMN)	**Type of Flight Plan Filed:**	IFR
Destination:	Fresno, CA (FAT)	**Type of Clearance:**	IFR
Departure Time:	11:40 Local	**Type of Airspace:**	Class E

Airport Information

Airport:	Ramona RMN	**Runway Surface Type:**	Asphalt
Airport Elevation:	1393 ft msl	**Runway Surface Condition:**	Dry
Runway Used:	27	**IFR Approach:**	None
Runway Length/Width:	4000 ft / 150 ft	**VFR Approach/Landing:**	None

Wreckage and Impact Information

Crew Injuries:	1 Fatal	**Aircraft Damage:**	Destroyed
Passenger Injuries:	2 Fatal	**Aircraft Fire:**	None
Ground Injuries:	N/A	**Aircraft Explosion:**	None
Total Injuries:	3 Fatal	**Latitude, Longitude:**	33.129768,-116.979553(est)

Administrative Information

Investigator In Charge (IIC):	Cline, Steven
Additional Participating Persons:	Michael W Arnold; Flight Standards District Office; San Diego, CA Todd Sigler; Cessna Aircraft Corporation; Wichita, KS Mike Grimes; Continental Motors; Lancaster, CA
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Last Revision Date:	
Investigation Class:	Class
Note:	
Investigation Docket:	https://data.ntsb.gov/Docket?ProjectID=52362