Aviation Investigation Final Report

Location:	CORONA, California	**Accident Number:**	LAX97FA142
Date & Time:	March 31, 1997, 00:00 Local	**Registration:**	N3894P
Aircraft:	Cessna P210N	**Aircraft Damage:**	Destroyed
Defining Event:		**Injuries:**	2 Fatal
Flight Conducted Under:	Part 91: General aviation - Personal		

Analysis

The pilot was operating under visual flight rules when the airplane collided with mountainous terrain during dark night conditions. The accident site is in a pass through which a major interstate highway traverses. The highway was on the left, or pilot's side of the airplane, and the high intervening terrain was on the right side of the airplane. The airplane struck the sloping terrain with its right wing and right side of the fuselage first. Weather observation stations surrounding the accident site were reporting cloud layers at and above the accident site elevation. No preimpact mechanical malfunctions or failures were noted during the wreckage examination.

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 adequate terrain clearance during a nighttime flight at low altitude through a mountainous area. Factors in the accident were the conditions of low clouds and dark light conditions.

Findings

Occurrence #1: IN FLIGHT COLLISION WITH TERRAIN/WATER
Phase of Operation: CRUISE

Findings
1. (F) WEATHER CONDITION - CLOUDS

2. (F) LIGHT CONDITION - DARK NIGHT
3. TERRAIN CONDITION - MOUNTAINOUS/HILLY
4. (F) ALTITUDE - LOW - PILOT IN COMMAND
5. (C) CLEARANCE - NOT MAINTAINED - PILOT IN COMMAND

Factual Information

History of the Flight

On March 31, 1997, at an unknown time, a Cessna P210N, N3894P, collided with mountainous terrain about 4 miles southwest of Corona, California. The airplane was destroyed and the certificated airline transport pilot/owner and passenger received fatal injuries. The airplane was being operated by the pilot/owner as a personal flight when the accident occurred. The flight is presumed to have originated from Long Beach, California, about 20 minutes before the accident. The pilot's destination could not be determined. There was no record found of a flight plan being filed or pilot weather briefing.

The airplane was not reported missing or overdue. Two U.S. Marine Corps helicopters discovered the accident site while on a training mission on the northern slopes of Sierra Mountain on April 4, 1997.

Pilot Information

The pilot held an airline transport pilot certificate that was issued on November 16, 1967, with an airplane rating for single engine land, and commercial pilot privileges for multiengine land. The most recent first class medical certificate was issued to the pilot on February 1, 1996, and contained the limitation that correcting lenses for distant vision be worn and that corrective lenses for near vision be in his possession while exercising the privileges of his airman certificate.

Only one of the pilot's personal flight records was recovered. The aeronautical experience listed in this report was obtained from a review of that personal record and Federal Aviation Administration (FAA) airmen records on file in the Airman and Medical Records Center located in Oklahoma City.

The pilot's total aeronautical experience consists of about 9,476 hours, of which 185 were accrued in the Cessna P210. The logbook lists a total of 18 and 4 hours, respectively, flown in the preceding 90 and 30 days prior to the accident.

Aircraft Information

The airplane was manufactured in June 1978 and had accumulated at least 2593.2 hours. The airplane information reviewed by the Safety Board was provided by the repair station that last worked on the airplane, and from copies of the last engine and airframe logbooks.

The airplane maintenance records indicated an annual inspection was accomplished January

2, 1997, at 2568.0 tachometer hours, about 25.2 tachometer hours before the accident. The maintenance records also revealed that the most recent maintenance was accomplished on March 18, 1997, 1.3 tachometer hours before the accident. After the maintenance the airplane was returned to service.

A Teledyne Continental Motors (TCM) TSIO-520-P engine, serial number 513073 was installed in the airframe on at the time of manufacturer. A different engine, serial number 236438R, was in the airplane at the time of the accident. The records reflected the engine was installed on the airframe on October 27, 1989, at tachometer hour meter time of 1,669.5. The engine was "top" overhauled prior to installation. TCM records indicate the installed engine was factory remanufactured on December 1, 1983. There was no record found indicating the use of the engine from the remanufactured date to the date the engine was installed in the accident airplane. A major overhaul was completed on June 4, 1992, at 2178.8 tachometer hours. There was no further record found of any engine overhaul after June 4, 1992.

Meteorological Information

According to a local rancher who lives within a mile of the accident site at the Hidden Springs Ranch, there was weather moving through the area on weekend of March 29, 1997. The closest weather reporting station is located about 7 nautical miles north of the accident site at the Chino Airport (CNO). A second weather reporting station is located 16 miles west of the accident site at the Fullerton Airport (FUL).

At 0658, March 31, 1997, the CNO air traffic control tower (ATCT) made its first weather observation. The weather observer reported 7 statute miles visibility, and a broken layer of clouds at 3,000 feet above ground level (agl). The elevation of the CNO is listed at 650 feet msl.

At 2046, March 30, 1997, the CNO ATCT made its last weather observation. The weather observer reported 7 statute miles visibility, and an overcast layer of clouds at 3,000 agl.

The Safety Board reviewed CNO routine aviation weather reports (METAR) for the period from 1540 March 30 to 1450 March 31. The sky condition reported either scattered, broken, or overcast sky conditions ranging from 2,500 to 5,000 feet agl during the period.

At 0847, March 31, 1997, FUL ATCT made its first weather observation of the day. The weather observer reported 7 statute miles visibility; a scattered layer of clouds at 1,500 feet agl; a broken layer at 4,000 feet agl; and overcast at 6,000 feet agl. The elevation of the FUL is listed at 96 feet msl.

The FUL METAR's for the period from 0647 March 30 to 1447 March 31 were reviewed. The sky condition reported either scattered, broken, or overcast sky conditions ranging from 1,500 to 6,000 feet agl during the period.

Wreckage and Impact Information

The airplane's wreckage was found at 33 degrees 51 minutes 39.9 seconds north latitude, and 117 degrees 39 minutes 36.8 seconds west longitude. The elevation of the initial impact point is about 2,300 feet above sea level (msl). The accident site is in the Cleveland National Forest above the Hidden Springs Ranch, and is bounded by Sierra peak to the south and Interstate 60 to the north. The wreckage path extended about 400 feet on a 57-degree magnetic azimuth. The accident site is in a pass through which a major interstate highway traverses. The highway was on the north side of the wreckage path and the high intervening terrain was on the south side of the path.

Two ground scars that formed an inverted "Y" marked the initial impact point. The first ground scar corresponded to the width of the fuselage and was about 211 feet long on an 45-degree magnetic azimuth. The ground scar stopped at the top of a spur. There were parts of the airplane spread along the ground scar, and most notable were two of the three propeller blades and fractured portions of the propeller hub. The airplane's cabin door was also found separated from the fuselage adjacent to the ground scar.

The second scar was upslope from the first ground scar and was about 16 feet to the right. The scar was about 18 feet long and intercepted the first ground scar about 10 feet from where it started. Fragmented portions of the airplane's right wing tip were found near the ground scar. About 6 feet of the outboard right wing was separated and found adjacent to the scar about 50 feet from the fuselage initial impact point.

The airplane's main wreckage was found about 150 feet beyond the spur in the bottom of a steep ravine. The main wreckage included the fuselage aft of the firewall, the left wing, and empennage. There was no evidence of the airplane striking the steep eastern slope of the ravine except at the main wreckage's point of rest. There was a debris field on the ravine's eastern slope. Some of the airplane's cockpit instruments, engine accessories, pieces of the aircraft battery, papers, and fuselage insulation were found in this debris field.

The engine was separated from the firewall and was found about 50 feet downslope in the ravine from the fuselage. Both magnetos, the starter, and oil filter were broken off. There was evidence of the engine striking the adjacent western slope of the ravine above the wreckage and then tumbling downslope. There was a ground scar above the airplane's main wreckage directly above the airplane firewall. Engine debris was traced through broken dense vegetation from the ground scar to the engine point of rest. The engine's turbocharger was found in the debris path. There was evidence of a postimpact fire around the turbocharger. The grass next to the turbocharger was burnt, along with the branches of a bush against which it was resting. The burn area was less than 2 feet in diameter.

Examination of the propeller system revealed the two recovered blades were abraded on the leading edges. Propeller blade serial number B92889 was curled at the tip from the leading to trailing edge and exhibited longitudinal scoring. The blade was bent about 135 degrees at

midspan. A deep chordwise gouge was found on the cambered side about 26 inches from the butt end where the blade attaches to the hub.

Propeller blade serial number B93369 had leading edge nicks and gouges. The trailing edge at the tip was bent forward. Longitudinal scoring was noted on the chambered side from the butt end for 21 inches to midspan. A small bend was noted on the trailing edge about 18 inches from the butt end.

The third propeller blade, serial number B93361, was not found. Portions of the propeller hub casting was found throughout the debris path with the aft portion was still attached to the engine crankshaft. The propeller control knob was found in the full forward/high rpm position. The propeller governor was destroyed.

The main landing gear and nose gear was found in the retracted position. The main landing gear cockpit control handle was found in the retracted position and the landing gear emergency extension hand pump handle was found stowed.

The altimeters and engine tachometer were examined. The encoding altimeter was found in the first ground scar debris path. It was indicating 2,300 feet msl and the Kollsman window was set at 30.05 inHg. The standby altimeter was found hanging from the damaged instrument panel. It was indicating 4,430 feet msl and the Kollsman window was set at 30.05 inHg.

The engine tachometer needle was found pointing to 300 rpm and the hour meter was indicating 2593.2 hours. A paper found at the accident site charted the airplane's use from the first entry on December 14, 1996, to the last entry on March 25, 1997. According to this paper, the airplane's last flight was for 1.1 tachometer hours, after which the engine tachometer hour meter indicated 2592.9 hours. The paper also indicated the airplane used 1.4 hours of fuel based on the Hobbs meter reading. There was a date entry on March 30, 1997, however, there was no information recorded.

The paper was compared to the pages of the pilot's logbook, which was also found on the accident site. The logbook indicated the pilot had flown a local flight from the Long Beach Airport (LGB) on March 25, 1997, logging 1.3 flight hours.

Continuity of the airplane's flight controls was established throughout the airframe except beyond the point where the right wing was severed. Beyond that point there was no evidence found of mechanical failure or malfunction with the right aileron. The pilot's control yoke was found with the right horn broken off. The right control yoke was found intact.

The airplane's engine throttle control was found midrange and bent to the right under the propeller control. The mixture control was also found full forward in the rich position.

The cabin door was broken at the hinges and crushed at the forward lower corner about 23

degrees. The door handles were found in the closed position with all pins extended.

Medical and Pathological Information

A postmortem examination was conducted by Riverside County Coroner's Office, with specimens from the pilot retained for toxicological examination. The specimens were sent to the FAA Civil Aeronautical Medical Institute (CAMI). The results of the toxicological analysis revealed high levels of ethanol in the specimens. According to the CAMI report, this was most likely attributed to postmortem ethanol production. There was no evidence found of carbon monoxide, cyanide, or drugs in the specimens submitted.

Tests and Research

Determination of Accident Date

According to family members of the passenger, the two occupants may have departed on the weekend for trip to either Las Vegas, or Laughlin, Nevada. They had no information as to the itinerary of the pilot or his passenger. According to the Riverside Coroner's Office, the scene appeared to be several days old due to the condition of the occupants.

The Federal Aviation Administration replayed audiotapes from the LGB ATCT to determine the airplane's departure time. The search consisted of tape monitoring of the ground control and ATCT frequencies for March 29, 30, and 31. There was no evidence found in the tapes of the airplane departing during the above dates when the LGB ATCT was operating.

The LGB Automated Surface Observation System (ASOS) METAR weather observations were reviewed by the Safety Board to determine when the departure airport altimeter settings matched those found on the airplane's two altimeters. The ASOS twice reported the altimeter setting of 30.05 inHg for the above dates when the LGB ATCT was not operational. The ASOS information is available to pilots via telephone and from departure control via radio.

On March 31, at 0256 hours, the LGB ASOS reported 10 miles visibility, a broken layer of clouds at 4,000 feet agl, and an altimeter setting of 30.05 inHg. One hour later at 0356 hours, the LGB ASOS reported 10 miles visibility with clear skies and an altimeter setting of 30.05 inHg.

Engine Examination

The engine was examined on April 30, 1997, at Lynn's Aircraft Engines, El Monte, California. The left magneto was not examined. It was broken off and not recovered. There was no evidence found during the examination of any preimpact engine malfunction or failure.

Turbocharger examination

The turbocharger system was examined on June 24, 1997, at the Aircraft Recovery Service

facility at the Compton Airport. Rotational scoring was noted on the turbine and compressor components. According to the turbocharger manufacturer, the scoring was a result of the rotating parts rubbing the case during the impact sequence.

There was evidence of a turbine shaft repair that had been accomplished. The aircraft engine logbook indicated the turbocharger was last replaced on September 30, 1992, with an overhauled unit.

There was no evidence found during the turbocharger examination that would have precluded normal operation.

Additional Information

Wreckage Release

The wreckage was released to the representatives of the owner on May 1, 1997, with the turbo charger system retained for examination. The turbocharger system, except for the turbine shaft, was released to the representatives of the owner on June 25, 1997, at the Compton Airport. The FAA took custody of the turbine shaft under their own authority.

Pilot Information

Certificate:	Airline transport; Commercial; Flight engineer	**Age:**	63,Male
Airplane Rating(s):	Single-engine land; Multi-engine land	**Seat Occupied:**	Left
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 1 Valid Medical--w/ waivers/lim	**Last FAA Medical Exam:**	February 1, 1996
Occupational Pilot:	UNK	**Last Flight Review or Equivalent:**	
Flight Time:	9476 hours (Total, all aircraft), 185 hours (Total, this make and model), 18 hours (Last 90 days, all aircraft), 4 hours (Last 30 days, all aircraft)		

Aircraft and Owner/Operator Information

Aircraft Make:	Cessna	**Registration:**	N3894P
Model/Series:	P210N P210N	**Aircraft Category:**	Airplane
Year of Manufacture:		**Amateur Built:**	
Airworthiness Certificate:	Normal	**Serial Number:**	P21000070
Landing Gear Type:	Retractable - Tricycle	**Seats:**	6
Date/Type of Last Inspection:	January 2, 1997 Annual	**Certified Max Gross Wt.:**	4000 lbs
Time Since Last Inspection:	25 Hrs	**Engines:**	1 Reciprocating
Airframe Total Time:	2593 Hrs	**Engine Manufacturer:**	Continental
ELT:	Installed	**Engine Model/Series:**	TSIO-520-AF
Registered Owner:	PABLO MOLO	**Rated Power:**	285 Horsepower
Operator:		**Operating Certificate(s) Held:**	None
Operator Does Business As:		**Operator Designator Code:**	

Meteorological Information and Flight Plan

Conditions at Accident Site:	Unknown	**Condition of Light:**	Not reported
Observation Facility, Elevation:	CNO ,650 ft msl	**Distance from Accident Site:**	4 Nautical Miles
Observation Time:	08:46 Local	**Direction from Accident Site:**	225°
Lowest Cloud Condition:	Scattered / 2500 ft AGL	**Visibility**	10 miles
Lowest Ceiling:	Overcast / 5000 ft AGL	**Visibility (RVR):**	
Wind Speed/Gusts:	8 knots /	**Turbulence Type Forecast/Actual:**	/
Wind Direction:	230°	**Turbulence Severity Forecast/Actual:**	/
Altimeter Setting:	30 inches Hg	**Temperature/Dew Point:**	
Precipitation and Obscuration:	No Obscuration; No Precipitation		
Departure Point:	LONG BEACH , CA (LGB)	**Type of Flight Plan Filed:**	None
Destination:		**Type of Clearance:**	None
Departure Time:	00:00 Local	**Type of Airspace:**	Class G

Airport Information

Airport:		**Runway Surface Type:**	
Airport Elevation:		**Runway Surface Condition:**	
Runway Used:	0	**IFR Approach:**	None
Runway Length/Width:		**VFR Approach/Landing:**	None

Wreckage and Impact Information

Crew Injuries:	1 Fatal	**Aircraft Damage:**	Destroyed
Passenger Injuries:	1 Fatal	**Aircraft Fire:**	On-ground
Ground Injuries:	N/A	**Aircraft Explosion:**	Unknown
Total Injuries:	2 Fatal	**Latitude, Longitude:**	

Administrative Information

Investigator In Charge (IIC):	Wilcox, Thomas
Additional Participating Persons:	ROGER W BROWNLOW; RIVERSIDE , CA ANDREW L HALL; WICHITA , KS MICHAEL J GRIMES; MOBILE , AL STEVEN G MACON; PHOENIX , AZ
Original Publish Date:	April 15, 1999
Last Revision Date:	
Investigation Class:	Class
Note:	
Investigation Docket:	https://data.ntsb.gov/Docket?ProjectID=29611