Aviation Investigation Final Report

Location:	Santa Barbara, California	**Accident Number:**	LAX05FA032
Date & Time:	November 10, 2004, 22:01 Local	**Registration:**	N803ZG
Aircraft:	Piper PA-32R-301T	**Aircraft Damage:**	Destroyed
Defining Event:		**Injuries:**	3 Fatal
Flight Conducted Under:	Part 91: General aviation		

Analysis

The airplane collided with upsloping high mountainous terrain during level controlled cruise flight on a night cross-country. Prior to takeoff, the pilot informed the air traffic controller (ATC) that he had received the airport's weather. A broken sky condition existed with layers about 5,500 and 7,000 feet mean sea level (msl). When the pilot subsequently climbed from 4,900 to 5,200 feet and requested information from ATC about the elevation of the clouds, he acknowledged that he "seems to be in a little bit of clouds...sort of in and out." The pilot continued climbing into clearer conditions. The flight continued and the airplane tracked near the centerline of Victor Airway 183, which had a published course of 195 degrees. The pilot was familiar with the roundtrip route between his Santa Barbara home-base airport and Bakersfield, and he had previously flown over the route. During the last few minutes of the radar-recorded flight, the pilot was generally cruising about 6,500 feet, as indicated by the mode C altitude reporting transponder. The pilot was receiving radar flight following service from a controller at the Los Angeles Air Route Traffic Control Center. The controller observed the airplane and was aware that the minimum enroute altitude (MEA) for airplanes on instrument clearances along the airway was 9,000 feet. The controller and the pilot had sectional aeronautical charts available for use that depicted a 6,840-foot msl mountain peak along the flight route. The pilot's course did not vary as he approached and impacted the mountain during the dark nighttime flight. The bearing between the initial point of impact (IPI) and the Santa Barbara Municipal Airport was 197 degrees. Also, the bearing and distance between the IPI and the main wreckage was 198 degrees and 0.25 miles. The controller did not issue a terrain-related safety alert, as required by a Federal Aviation Administration order.

Probable Cause and Findings

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

The pilot's failure to select and maintain an adequate terrain avoidance cruise altitude. Contributing factors were the dark nighttime conditions, the rising mountainous terrain, and the Federal Aviation Administration controller's failure to issue a terrain-related safety alert.

Findings

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

Findings
1. (F) LIGHT CONDITION - DARK NIGHT
2. (F) TERRAIN CONDITION - MOUNTAINOUS/HILLY
3. (C) ALTITUDE/CLEARANCE - INADEQUATE - PILOT IN COMMAND
4. (F) OTHER PSYCHOLOGICAL CONDITION - PILOT IN COMMAND
5. (F) PROCEDURES/DIRECTIVES - NOT FOLLOWED - ATC PERSONNEL(ARTCC)
6. (F) SAFETY ADVISORY - NOT ISSUED - ATC PERSONNEL(ARTCC)

Factual Information

HISTORY OF FLIGHT

On November 10, 2004, about 2201 Pacific standard time, a Piper PA-32R-301T (Saratoga), N803ZG, cruised into rising mountainous terrain about 17 nautical miles (nm) north of Santa Barbara, California. J. P. III, Enterprises, Inc., owned and operated the airplane, which was piloted by its owner. The airplane was destroyed during multiple impacts with trees and terrain, and by the post impact ground fire. Visual meteorological conditions prevailed in the vicinity of the accident site, located in the Dick Smith wilderness area of the Los Padres National Forest. The flight was performed under the provisions of 14 CFR Part 91, and no flight plan had been filed. The non-instrument rated private pilot and two passengers were fatally injured during the dark nighttime business flight. One of the passengers was a non-certificated student pilot. The flight originated from Bakersfield, California, at 2137. During the flight the pilot was returning to his home-base airport.

At 2129, the pilot of N803ZG contacted the Meadows Field Air Traffic Control Tower in Bakersfield, and he advised the controller that he intended to fly to Santa Barbara. The pilot indicated that he planned to fly under visual flight rules (VFR) and that he had received the airport's terminal information service (ATIS) broadcast information.

At 2136:51, the controller cleared the pilot to takeoff from runway 30R. About 3 minutes later the airplane was radar identified on its assigned transponder squawk code.

The Federal Aviation Administration's (FAA) recorded radar data indicates that the airplane turned to a southerly heading and proceeded toward Santa Barbara over a route nearly paralleling federal airway V183, on its 196-degree radial.

At 2140:47, the pilot indicated that he was climbing through 3,600 feet mean sea level (msl), and that he intended to climb to 6,500 feet msl. About 3 minutes later the pilot made the following transmission: "Bakersfield departure Saratoga eight zero three zulu golf." The controller responded and stated "Saratoga three zulu golf go ahead."

At 2143:59, the pilot stated: "I seem to be in a little bit of uh clouds here what uh are my ceilings and uh can I fly over them?" About this time the airplane's altitude was between 4,900 and 5,200 feet, according to the airplane's mode C altitude encoding transponder.

The controller responded and stated: "I do not have any current base and tops reports the uh ceiling at Meadows Field is uh ceiling five thousand broken uh with a scattered layer at four thousand four hundred. I do not have any tops are you I M C?"

The pilot responded at 2144:20 and stated: "uh no I am actually eh sort of in and out but I just don't want to get in I M C." About this time the airplane was approaching 5,400 feet.

At 2144:43, the controller advised the pilot that the minimum instrument flight rules (IFR) altitude about 5 miles ahead of the pilot was 3,000 feet, and that 12 miles ahead it was 5,100 or 6,500 feet, depending upon the direction flown. Thereafter, farther south it was 10,000 feet.

The pilot responded to the controller and stated, "did you say tops are at ten thousand feet?"

The controller replied "no no no those last altitudes I mentioned were my minimum IFR altitudes issued if you were an IFR aircraft…." The pilot responded and stated, "Roger okay I'll just (stay under) that thank you." According to the FAA's recorded radar data, about this time the airplane was approaching 6,000 feet.

At 2147:02, the pilot stated to the controller that "it looks like the tops of the clouds here for your information is about six point five so I'm just going to go up to eight point five." The controller responded by stating "you have good VFR flight uh above those clouds." The pilot replied that it was nice and smooth and clear as a bell.

Thereafter, at 2149:14, the controller told the pilot to contact the Los Angeles Air Route Traffic Control Center (ARTCC). About this time the airplane had climbed through approximately 8,200 feet.

The pilot contacted the Los Angeles ARTCC and spoke with the radar Sector 2 controller. The Sector 2 controller identified the pilot's airplane and issued the pilot the Santa Barbara altimeter setting, 30.11 inches of mercury. The pilot acknowledged the altimeter setting.

Radar data shows that over the next 11 minutes the airplane climbed to 8,400 feet and then descended, reaching 6,400 feet at 2154. The Sector 2 controller initiated an automated handoff to Santa Barbara Approach Control, but the handoff was not accepted.

Meanwhile, the southbound airplane continued flying between 6,300 and 6,500 feet until 2200:24, when it disappeared from radar. Its last recorded position was 34 degrees 42.056 minutes north latitude by 119 degrees 38.585 minutes west longitude, about 6,300 feet (transponder altitude).

When the airplane's radar target was lost the airplane's track went into coast status. At 2202, the Sector 2 controller tried to reestablish radio contact with the airplane, advising the pilot that radar contact was lost, and instructing the pilot to report San Marcus VOR. There was no response from the pilot.

The Sector 2 controller called the pilot two more times without success. The controller then called Santa Barbara approach control to advise them that she was unable to communicate with the airplane. The Santa Barbara controller had not taken the handoff from the Sector 2

controller because he could not see the target.

It was approaching the end of the work shift for the Sector 2 controller, and she departed the facility after responding to an inquiry initiated by the Santa Barbara controller. The Sector 2 controller updated the Santa Barbara controller with the latest information she had regarding the airplane that had disappeared. The Sector 2 controller informed the Santa Barbara controller that "I didn't terminate him I just lost radio and radar with him."

When the pilot failed to arrive home, a concerned family member reported the airplane overdue. A series of additional events occurred involving FAA personnel in which their denial of having provided services to the airplane was found to be in error. (See the National Transportation Safety Board's Air Traffic Control Group Chairman's Factual Report for additional details.)

The United States Air Force Rescue Coordination Center provided local authorities with the coordinates for the airplane's last known position. The following morning the accident site was located approximately 1/3-mile south of the airplane's last recorded radar position.

No witnesses reported observing the accident. The accident time was estimated by the Safety Board investigator. It was based upon the time at which radar data was lost and the airplane's average ground speed during its last 2 minutes of recorded flight.

PERSONNEL INFORMATION

Pilot.

In 1982 the pilot was issued a private pilot certificate with the following ratings: Airplane single engine land. On August 24, 2004, he was again issued a private pilot certificate with the same ratings. On the certificate application form, the pilot indicated that his total flight time was 295.4 hours. According to FAA records, on September 27, 2004, the pilot's total flight time was indicated as being 390 hours.

Flight Training.

The pilot based his airplane at the Santa Barbara Municipal Airport. According to information contained in the pilot's personal flight record logbook, and according to statements made by two certified flight instructors (CFI) who provided instruction to the pilot, the pilot was competent and he had above average flying skills.

Passenger (non-certificated student pilot).

The passenger's flight record logbook indicates he commenced taking flying lessons on August 12, 2004. All lessons were in a Cessna 172. The last lesson was on November 9, the day prior to the accident flight. The passenger's total flying experience was logged as dual

instruction received, and it totaled about 12.8 hours. All of the training was acquired with a CFI. No nighttime hours were logged.

AIRCRAFT INFORMATION

The airplane's maintenance records were not located or provided to the Safety Board investigator for review.

In part, the airplane was equipped with an autopilot, and a Garmin GNS 430 global positioning satellite (GPS) receiver.

According to a certified flight instructor who flew the airplane on a 2.1-hour-long flight on November 6, 2004, the airplane "performed perfectly."

METEOROLOGICAL INFORMATION

Surface Observation, Bakersfield.

Bakersfield Meadows Field (BFL), elevation 507 feet msl, reported its weather at 2054. The wind was from 010 degrees at 3 knots, with 6 miles visibility, and a broken ceiling existed at 5,000 and 6,500 feet above ground level.

Surface Observation, Santa Barbara.

Santa Barbara Municipal Airport (SBA), elevation 10 feet msl, reported its weather at 2053, 2153, and 2253. At these times, SBA reported calm wind, with 9 to 10 miles visibility, and a clear sky. The altimeter was, respectively, 30.11, 30.12, and 30.11 inches of mercury.

Satellite Imagery and Pilot Reports.

Infrared images from 2100 to 2200 were reviewed from the Geostationary Operations Environmental Satellite number 10 (GOES-10). The 2145 image depicted a band of clouds extending west-to-east north of Santa Barbara over the higher terrain and obscuring the accident site. The radiative clouds top temperature over the accident site corresponded to cloud tops near 10,000 feet. Pilot reports also indicated broken to overcast cloud tops at 9,000 to 11,000 feet in the vicinity. (See the Safety Board's Meteorology Factual Report for additional information.)

Moon Illumination.

Data from the U.S. Naval Observatory indicated that the moon's elevation was about 15 degrees below the horizon. Its phase was a waning crescent with 4 percent of the moon's visible disk illuminated.

AIDS TO NAVIGATION AND FAA SERVICES

According to FAA records of facility operations, all electronic aids to navigation pertinent to the airplane's route of flight were functional. No services from the FAA's flight services station (flight plan, in-flight contact, weather briefing) were provided to the pilot.

COMMUNICATION

The FAA reported that all communications to and from the pilot were routine.

WRECKAGE AND IMPACT INFORMATION

U. S. Forest Service personnel reported to the Safety Board investigator that estimated 40-foot-tall fir trees were observed at GPS coordinates of 34 degrees 41.748 minutes north latitude by 119 degrees 38.762 minutes west longitude. Two trees, about 20 feet apart and near this location on the north side of a ridgeline, were observed with the upper 10 feet (estimated distance) of their trunks severed. The approximate elevation at the points of severance was 6,630 feet msl, which was a few yards below the top of the ridgeline.

The airplane's left wing, a main landing gear wheel, and other debris were located on the mountaintop, yards south of these trees. The leading edge of the wing was observed crushed in an aft direction. The crushed area resembled nearby tree trunks, with an estimated 1-yard diameter. The distance and magnetic bearing from the severed mountaintop trees to the Santa Barbara Municipal Airport is about 18.8 nm and 197 degrees.

The Safety Board investigator's on-scene examination of the accident site and airplane wreckage revealed that the principal ground scar was oriented in a north-to-south direction, commencing approximately 0.25 nm south (199 degrees, magnetic) of the severed trees. The ground scar consisted of an estimated 75- to 90-foot-long swath devoid of native vegetation, on estimated 28-degree down sloping terrain. Two of the airplane's three propeller blades were observed partially underground in this area, along with fragmented fuselage skin panels and a nose gear door.

The main wreckage was located at approximate GPS coordinates of 34 degrees 41.563 minutes north latitude by 119 degrees 38.905 minutes west longitude, and at an estimated elevation of 6,030 feet msl. The approximate magnetic bearing from the initial ground swath to the main wreckage was 206 degrees.

The main wreckage principally consisted of the following components: (1) aft empennage with attached stabilator, vertical stabilizer and attached rudder assembly; (2) right wing and flap; (3) fire-destroyed cockpit and cabin; (4) fire-destroyed instrument panel; and (5) engine assembly with attached propeller hub including one attached propeller blade (less tip).

MEDICAL AND PATHOLOGICAL INFORMATION

Pilot.

The pilot held a third-class aviation medical certificate. It was issued on April 14, 2004, and bore the following limitations: "Must wear corrective lenses."

The Santa Barbara County Coroner's Office reported that no autopsy was performed on the pilot because of the extent and severity of the impact trauma and thermal burns.

Toxicological tests were performed on specimens from the pilot by the FAA's Bioaeronautical Sciences Research Laboratory. No evidence of screened drugs or ethanol was detected.

Passenger (Non-certificated Student Pilot).

The passenger did not hold an aviation medical certificate.

Toxicological tests were also performed on specimens from the passenger, who was a non-certificated student pilot. No evidence of screened drugs was detected. Ethanol was detected in specimens of blood and muscle, and acetaldehyde was detected in specimens of blood and heart. The laboratory manager reported that the ethanol found in this case may have been the result of postmortem ethanol production. Putrefaction was not found in the specimens.

TESTS AND RESEARCH

Airframe Examination.

The majority of the airframe was consumed by fire. Data provided by the New Piper Aircraft Company participant indicated that the flaps were retracted and the stabilator trim tab was in approximately the neutral position.

The airplane's avionics, including the Garmin GNS 430, were destroyed by fire.

The continuity of the stabilator and rudder control system cables were verified from their respective attachment points to the cockpit. All of the seats were observed separated from the fuselage floor and were destroyed by fire. All seat and restraint system material appeared consumed by fire.

Engine Examination.

The engine was also examined on scene. It had sustained impact and fire damage. No evidence of case rupture or preimpact damage was noted. The Lycoming Engine participant reported that the bottom spark plugs exhibited wear and color signatures consistent with normal operation. The right magneto drive gear was rotated and sparks were observed from all 6 towers.

Propeller Examination.

The two blades that were separated from the hub and were located in the initial debris field exhibited chordwise scratches and tip damage. One of the blades exhibited "S" bending.

Safety Alerts, FAA Air Traffic Control Order 7110.65.

FAA Order 7110.65 states, in part, that a controller's duty priority is to "give first priority to separating aircraft and issuing safety alerts...." The safety alert is to be issued to an aircraft once the controller observes and recognizes a situation wherein the aircraft is in unsafe proximity to terrain, obstacles, or other aircraft. The controller "...must remain vigilant for such situations...."

Regarding the flight rules that the airplane is operating under, the FAA Order makes no distinction between VFR and IFR aircraft.

Radar Track.

During the last 2 minutes of flight in which the airplane's radar track was recorded, the airplane's average ground speed was about 142 knots. Also, its average magnetic track was 197 degrees.

Radar Service to VFR Airplanes.

Based upon the communication transcript, the pilot did not specifically request that he be provided with any service from controllers for the en route portion of his flight between Bakersfield and Santa Barbara. According to the FAA AWP-505 staff, the pilot's communications were interpreted by the respective controllers to be representative and typical of a pilot having requested radar flight following service, without having specifically requested such service.

During the interview with the ARTCC Sector 2 controller, who was the last controller to have spoken with the pilot, the controller indicated her belief that she was providing radar flight following service to the pilot. She stated this service did not include terrain-related safety alerts to the VFR aircraft.

Controller's Statements.

The Safety Board's ATC Group Chairman and participants in the investigation interviewed the Sector 2 controller. In pertinent part, the controller indicated that she was aware of the minimum en route IFR altitude (9,000 feet msl) for the airway overlying the accident airplane's route, and the mode C altitude reported by the airplane's transponder. Also, there was a sectional aeronautical chart posted overhead that depicted terrain in the area of the pilot's

flight route. The controller stated that she believed the minimum instrument altitude for the area was set at 1,000 feet above terrain elevation.

Route Familiarity and Chart Usage.

The accident occurred within the lateral limits of V183 and near its centerline. The accident site is next to a charted mountain having a depicted peak elevation of 6,840 feet msl.

The pilot had flown the roundtrip route between Santa Barbara and Bakersfield on previous occasions. Acquaintances of the pilot reported that the pilot had planned to further his medical practice in the Bakersfield area, and he was using his airplane to commute between his Santa Barbara home and a medical facility in the vicinity of Bakersfield.

A Los Angeles sectional aeronautical chart was found in the wreckage of the accident airplane. The chart was marked with a ruled line over the direct flight route between Bakersfield and Santa Barbara. An "X" was noted on the chart about the location where the accident occurred, near the subject 6,840-foot msl mountain peak (see photograph of the chart).

The following statement was found printed on the chart's legend: "ATTENTION THIS CHART CONTAINS MAXIMUM ELEVATION FIGURES (MEF). The Maximum Elevation Figures shown in quadrangles bounded by ticked lines of altitude and longitude are represented in THOUSANDS and HUNDREDS of feet above mean sea level...." The Safety Board investigator noted that the quadrangle encompassing the location where the accident occurred was marked with the elevation figure "72" representing 7,200 feet.

ADDITIONAL INFORMATION

Controlled Flight Into Terrain.

On April 1, 2003, the FAA published Advisory Circular (AC) No. 61-134 on the subject entitled "General Aviation Controlled Flight Into Terrain Awareness." In pertinent part, the AC highlights the inherent risk that controlled flight into terrain (CFIT) poses for general aviation (GA) pilots, and identifies some of the factors involved in CFIT accidents.

The FAA defined CFIT in an operational manner, as follows: "CFIT 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."

The FAA also defined "situational awareness" in the following manner: "...Situational awareness means 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."

Wreckage Release.

On March 10, 2005, all recovered airplane wreckage was release to the owner's assigned insurance company, in care of Aircraft Recovery Service, Littlerock, California. No parts were retained.

Pilot Information

Certificate:	Private	**Age:**	50,Male
Airplane Rating(s):	Single-engine land	**Seat Occupied:**	Unknown
Other Aircraft Rating(s):	None	**Restraint Used:**	
Instrument Rating(s):	None	**Second Pilot Present:**	No
Instructor Rating(s):	None	**Toxicology Performed:**	Yes
Medical Certification:	Class 3 With waivers/limitations	**Last FAA Medical Exam:**	April 1, 2004
Occupational Pilot:	No	**Last Flight Review or Equivalent:**	August 1, 2004
Flight Time:	322 hours (Total, all aircraft), 19 hours (Total, this make and model), 205 hours (Pilot In Command, all aircraft), 40 hours (Last 90 days, all aircraft), 5 hours (Last 30 days, all aircraft), 2 hours (Last 24 hours, all aircraft)		

Aircraft and Owner/Operator Information

Aircraft Make:	Piper	**Registration:**	N803ZG
Model/Series:	PA-32R-301T	**Aircraft Category:**	Airplane
Year of Manufacture:		**Amateur Built:**	
Airworthiness Certificate:	Normal	**Serial Number:**	3257357
Landing Gear Type:	Retractable - Tricycle	**Seats:**	7
Date/Type of Last Inspection:		**Certified Max Gross Wt.:**	3600 lbs
Time Since Last Inspection:		**Engines:**	1 Reciprocating
Airframe Total Time:		**Engine Manufacturer:**	Lycoming
ELT:	Installed, activated, aided in locating accident	**Engine Model/Series:**	TIO-540-AH1A
Registered Owner:	J. P. III Enterprises, Inc.	**Rated Power:**	300 Horsepower
Operator:	Juan F. Padilla	**Operating Certificate(s) Held:**	None

Meteorological Information and Flight Plan

Conditions at Accident Site:	Visual (VMC)	**Condition of Light:**	Night/dark
Observation Facility, Elevation:	SBA,10 ft msl	**Distance from Accident Site:**	19 Nautical Miles
Observation Time:	21:53 Local	**Direction from Accident Site:**	197°
Lowest Cloud Condition:	Clear	**Visibility**	10 miles
Lowest Ceiling:	None	**Visibility (RVR):**	
Wind Speed/Gusts:	/	**Turbulence Type Forecast/Actual:**	/
Wind Direction:		**Turbulence Severity Forecast/Actual:**	/
Altimeter Setting:	30.12 inches Hg	**Temperature/Dew Point:**	10°C / 8°C
Precipitation and Obscuration:	No Obscuration; No Precipitation		
Departure Point:	Bakersfield, CA (BFL)	**Type of Flight Plan Filed:**	None
Destination:	Santa Barbara, CA (SBA)	**Type of Clearance:**	VFR flight following
Departure Time:	21:37 Local	**Type of Airspace:**	Class G

Airport Information

Airport:	Santa Barbara Municipal SBA	**Runway Surface Type:**	
Airport Elevation:	10 ft msl	**Runway Surface Condition:**	Unknown
Runway Used:		**IFR Approach:**	None
Runway Length/Width:		**VFR Approach/Landing:**	None

Wreckage and Impact Information

Crew Injuries:	1 Fatal	**Aircraft Damage:**	Destroyed
Passenger Injuries:	2 Fatal	**Aircraft Fire:**	On-ground
Ground Injuries:	N/A	**Aircraft Explosion:**	None
Total Injuries:	3 Fatal	**Latitude, Longitude:**	34.699165,-119.658889

Administrative Information

Investigator In Charge (IIC):	Pollack, Wayne
Additional Participating Persons:	Brian M Ashton; Federal Aviation Administration; Van Nuys, CA Charles Little; New Piper Aircraft; Vero Beach, FL Mark Platt; Lycoming Engines; Williamsport, PA Pete Trono; National Air Traffic Controller's Association; Pearblossom, CA
Original Publish Date:	June 28, 2006
Last Revision Date:	
Investigation Class:	Class
Note:	The NTSB traveled to the scene of this accident.
Investigation Docket:	https://data.ntsb.gov/Docket?ProjectID=60558