National Transportation Safety Board
Aviation Accident Factual Report

Location:	WARNER SPRINGS, CA	**Accident Number:**	LAX99FA138
Date & Time:	04/03/1999, 1931 PST	**Registration:**	N9254Q
Aircraft:	Piper PA-32R-301	**Aircraft Damage:**	Destroyed
Defining Event:		**Injuries:**	4 Fatal
Flight Conducted Under:	Part 91: General Aviation - Personal		

HISTORY OF FLIGHT

On April 3, 1999, at 1931 Pacific standard time (PST), a Piper PA-32R-301, N9254Q, collided with terrain during an uncontrolled descent near Warner Springs, California. Assist Business Services, Inc., owned the airplane and was operating it under the provisions of 14 CFR Part 91. The personal flight departed Deer Valley Airport (DVT) Phoenix, Arizona, about 1700. The private, instrument rated pilot and his three passengers sustained fatal injuries; the airplane was destroyed. The flight was en route to McClellan/Palomar Field, Carlsbad, California, on an IFR flight plan. Night visual meteorological conditions prevailed at Ramona, California, the nearest reporting station; however, weather conditions at the airplane's cruise altitude and at the impact site are unknown. The main wreckage's location was 33 degrees 09.443 minutes north latitude and 116 degrees 32.976 minutes west longitude. Site elevation, derived from a handheld GPS (global positioning system), was 2,930 feet.

The Safety Board Investigator-in-Charge (IIC) listened to recorded radio transmissions between the pilot and the Prescott, Arizona, Automated Flight Service Station (AFSS). The pilot filed a flight plan with the AFSS for an estimated departure time of 1700 PST. He filed for a cruise altitude of 10,000 feet. The route of flight was Deer Valley to the Buckeye VOR (very high frequency omni-directional radio range), Victor 16 to Blythe, Victor 460 to Julian, and vectors to Palomar.

The IIC listened to recorded radio transmissions between the pilot and the Los Angeles Air Route Traffic Control Center sector 9/10 (ZLA). About 1820, the pilot reported icing conditions and requested a lower altitude. ZLA cleared the pilot to descend to 9,000 feet and indicated 8,000 feet was available. However, ZLA pointed out that the pilot would have to climb to a higher altitude as he progressed along his route due to minimum en route altitude requirements. About 2 minutes later, the pilot requested to continue to 8,000 feet.

The IIC reviewed recorded radar data. About 1820, the airplane's secondary beacon (code 4106) indicated a descent began from a mode C reported altitude of 10,100 feet and continued to 8,200 feet. About 1824, the pilot reported that he was below the clouds, which were at

8,700 feet, and the ice was coming off.

About 1840, ZLA instructed the pilot to climb at his discretion to 9,000 feet. The pilot later requested and received clearance to climb to 10,000 feet. The secondary beacon indicated a climb began about 1840, and a mode C reported altitude of 10,200 feet was attained about 1900.

ZLA later instructed the pilot to descend and maintain 9,000 feet, and then on down to 8,000 feet. At 1924:26, the secondary beacon indicated a southwesterly descent began from a mode C reported altitude of 10,000 feet.

ZLA instructed the pilot to contact SOCAL Approach on frequency 123.2. The IIC reviewed a transcript of recorded radio transmissions between the pilot and Southern California TRACON San Diego North Radar (SDNR). About 1926, SDNR informed the pilot he was 9 miles northeast of the Julian VOR. SDNR instructed the pilot to cross Julian at or above 8,000 feet and cleared him for the ILS (instrument landing system) runway 24 Palomar via the Julian transition. At 1926:26, the pilot acknowledged clearance for the approach. No other transmissions were recorded from the pilot. At 1926:25, the secondary beacon indicated a mode C reported altitude of 9,200 feet.

The flight path and descent progressed toward the Julian VOR. The following mode C altitudes were recorded: at 1928:49, 9,000; at 1929:13, 8,900; at 1929:37, 8,800; and at 1930:01, 8,600. This computed to an average descent rate of 333 feet per minute (fpm) over this 72-second time frame. At 1930:25,the mode C reported altitude was 8,200 feet, which was a location less than 2 miles from the VOR. This computed to an average descent rate of over 1,700 fpm during this 24-second time frame. The secondary beacon indicated the descent continued, but the track began a turn to the right. The last secondary beacon target at 1930:37, indicated a mode C reported altitude of 7,900 feet. During this 12-second span, the descent rate computed to 1,500 feet per minute. The data indicated two more primary targets that continued turning to the right. The last apparent target occurred at 1931:01, at coordinates 33 degrees 09 minutes 45 seconds north latitude and 116 degrees 33 minutes 23 seconds west longitude.

About 1935, SDNR reported a loss of radio and radar contact with the airplane and issued an alert notice. A civil air patrol unit working another mission in the area received an ELT (emergency locator transmitter) signal and discovered the wreckage about 0225 Pacific daylight time on April 4th.

PERSONNEL INFORMATION

A review of Federal Aviation Administration (FAA) records revealed the pilot held a private pilot certificate with airplane single engine land and instrument ratings. A review of the pilot's logbook revealed his first flight was on February 3, 1997, and he received the private certificate on May 28, 1997. Total time at the private pilot check ride was 65.7 hours. The first flight logged in the accident airplane was May 14, 1997. He received the instrument rating on December 6, 1997. The last flight recorded in the logbook was on March 16, 1999, and as of

that entry, total flight time was about 565 hours. He had about 520 hours in this make and model; about 35 hours were logged in the last 90 days. He received a third-class medical certificate with no limitations or waivers on March 6, 1997.

AIRPLANE INFORMATION

The airplane was a New Piper Aircraft Corporation PA-32R-301, serial number 3246001. A maintenance facility completed an annual inspection on June 12, 1998, at a total time of 505.3 hours. The engine was a Textron Lycoming IO-540-K1G5, serial number L-25593-48A. Total time on the engine was 675.5 hours. The tachometer read 675.5 at the accident scene.

METEOROLOGICAL CONDITIONS

The pilot obtained a weather briefing from the Prescott Automated Flight Service Station (AFSS) between 1536 and 1541 PST. The different segments of the brief follow.

An AFSS specialist advised him of current in-flight weather advisories. An AIRMET (Airman's Meteorological Information) existed for occasional moderate turbulence below flight level 180 and mountain obscuration. The specialist also advised that the Palomar, California, area would be just south of a SIGMET (Significant Meteorological Information) for severe turbulence below 14,000 feet with low-level wind shear potential.

The area forecast called for broken ceilings between 8,000 to 10,000 feet in the southern California desert areas. In the San Diego area ceilings could be between 3,000 and 5,000 feet with visibility unrestricted.

The terminal forecast into the southern California area called for ceilings of 4,000 feet broken, 15,000 feet broken, unrestricted visibility, surface winds from 160 degrees at 5 knots, with a 30 per cent chance of ceilings 3,000 feet broken and rain shower activity.

The AFSS specialist briefed Pilot Reports (PIREPS), which included two reports of up and down drafts between 1,000 and 1,500 feet per minute over Thermal, California. Another PIREP reported light rime ice over POGI VOR (195 degrees and 37 nautical miles from Julian).

The pilot asked for the freezing level over the mountains in southern California. The AFSS specialist responded that it was about 6,000 feet, and asked if the pilot had deicing equipment installed. The pilot replied he did not, and the AFSS specialist said that would be the pilot's main concern. The pilot asked for confirmation of only the one icing report and if a front that was moving south was in the San Diego area. The FSS specialist confirmed the lone icing report and said the front was not over San Diego, but the effects were.

Between 1633 and 1658 PST, the pilot contacted the Prescott AFSS to file an instrument flight rules (IFR) flight plan and obtain an abbreviated weather briefing. The AFSS specialist advised of AIRMETS and asked the pilot if he wanted all of them read to him. The pilot advised the

specialist that he received all of them an hour earlier, and they were for turbulence. He informed the specialist that he would like to know about any reports of freezing weather because he did not have deicing equipment. He said he would expect it mainly over the Julian area.

The AFSS specialist noted a Citation jet 15 miles northwest of Julian reported light to moderate rime icing between 8,000 and 11,000 feet. The specialist advised the pilot of two additional PIREPs in the area of Oceanside, California (262 degrees at 42 miles from Julian and 6 miles from his destination airport). A Cessna 172 at 6,000 feet reported light rime icing, and an Embraer 120 reported moderate clear icing 20 miles northwest of Oceanside. The pilot stated he would monitor that one and possibly stop short at Palm Springs, California.

A Safety Board staff meteorologist prepared a factual report. The following paragraphs highlight pertinent facts, and the entire report is attached. Sunset occurred at 1815 PST and civil twilight ended at 1840 PST. There was 91 percent illumination of the moon.

The accident occurred in the vicinity of the Santa Rosa, Laguna, and Vulcan mountain ranges, which run in a northwest to southeast orientation. These mountains often contribute to the formation of mountain wave activity and turbulence across southern California. One of the highest peaks in these ranges, with an elevation in excess of 5,700 feet, is in the Vulcan Mountains. This peak was within 2 miles of the accident site, and upwind of the flight track. A steep slope to the northeast is also associated with the Vulcan Mountains.

The closest upper air station or rawinsonde was launched from Miramar, California, station number 72293 (239 degrees and 33 miles from the accident site). The data from the 0000Z sounding indicated a freezing level of approximately 4,200 feet. The data indicted wind at the surface was from 230 degrees at 12.8 knots; the wind increased in speed and slightly veered to a west-northwest direction with an increase in height.

The upper air data indicted saturated cloud layers between 3,000 to 6,000 feet and 9,000 to 9,500 feet. It also indicated that the associated cloud layers provided conditions favorable for the support of super cooled water droplets. Temperatures between 7,000 to 10,000 feet varied from -3 to -7 degrees Celsius (C). A strong vertical wind shear was present above the cloud layer.

The staff meteorologist used this data in a software program developed by Environmental Research Services to determine the potential for turbulence and icing. It determined a 5 percent probability of light clear ice at 9,796 feet; 80 percent chance of light rime at 9,650 feet; 93 percent chance of severe rime at 9,107 feet; and 63 percent chance of moderate rime at 9,053 feet. It determined an 18 to 76 percent probability of moderate to severe clear icing potential at 6,000 feet and below. It determined a 13 to 73 percent probability of light turbulence between 7,000 and 10,000 feet.

The staff meteorologist utilized infrared satellite data to determine that cloud tops were around 15,000 feet. He used this data to confirm the existence of an icing environment over the

accident site.

Ramona (KRNM) elevation, 1,393 feet, was on a bearing of 244 degrees at 19 miles from the accident site. The airport was equipped with an Automated Weather Observation System (AWOS-3), which the tower augmented locally. A routine aviation weather report (METAR) for Ramona was issued at 1856 PST. It stated skies were scattered at 600 feet above ground level (agl), broken at 1,100 feet, and overcast at 1,900 feet. The remarks section noted the ceiling was variable between 800 and 1,200 feet. Visibility was 9 miles in light rain showers; winds were from 260 degrees at 21 knots gusting to 29 knots. The remarks section noted peak winds from 280 degrees at 30 knots occurred at 1839. Temperature was 44 degrees Fahrenheit; dew point was 43 degrees Fahrenheit; and the altimeter setting was 29.74 InHg.

The automated observation for Ramona at 1924 PST reported: winds from 260 degrees at 20 knots gusting to 23 knots; visibility 10 miles; a few clouds at 1,300 feet, ceiling overcast at 1,900 feet; temperature 45 degrees Fahrenheit; dew point 41 degrees Fahrenheit; and altimeter 29.73 inHg. This observation included the remarks: peak wind from 250 degrees at 30 knots recorded at 1901 PST, rain ended at 1917, a trace of precipitation recorded (less than 0.01 inches), thunderstorm sensor not operating.

Palomar (KCRQ), the destination airport at an elevation of 328 feet, was on a bearing of 258 degrees at 37 miles from the accident site. Palomar was equipped with an Automated Surface Observation System (ASOS), which was augmented by a human observer. The METAR issued for Palomar at 1853 PST reported: winds from 280 degrees at 14 knots gusting to 23 knots; visibility 10 miles; a few clouds at 2,500 feet, a broken ceiling at 3,400 feet, overcast at 5,000 feet; temperature 50 degrees Fahrenheit; dew point 41 degrees Fahrenheit; and altimeter 29.77 inHg. The remarks section noted a falling pressure tendency at 2.6 mb over 3 hours, and the rain ended at 1756 PST with a trace of rain the past hour and 0.04 inches for the preceding 3 hours.

A METAR for Campos (CZZ), California, (172 degrees at 33 miles from the accident site, elevation 2,631 feet) was issued at 1852 PST. It reported: winds from 230 degrees at 21 knots gusting to 30 knots; the visibility and sky conditions were missing; temperature 39 degrees Fahrenheit; dew point 37 degrees Fahrenheit; and altimeter 29.69 inHg. The remarks section noted peak winds from 240 degrees at 33 knots occurred at 1827.

A METAR for Thermal (KTRM), California, (037 degrees at 34 miles from the accident site, elevation 114 feet below sea level) was issued at 1850 PST. It reported: winds from 280 degrees at 13 knots; visibility 10 miles in light rain; broken ceiling at 7,000 feet, overcast at 9,000 feet; temperature 57 degrees Fahrenheit; dew point 36 degrees Fahrenheit; and altimeter 29.67 inHg. The remarks section noted that rain began at 1845.

COMMUNICATIONS

The pilot was on an IFR flight plan and in communication with Los Angeles Air Route Traffic Control Center (ZLA) while en route. He established contact with SOCAL Approach on

frequency 123.2, and had been cleared for the instrument approach procedure into Palomar.

WRECKAGE AND IMPACT INFORMATION

The main wreckage site was on the 047 degree radial, approximately 2 miles from the Julian VOR. An aerial search by a sheriff's helicopter located pieces of the airplane structure that were not collocated with the main wreckage. The pieces were east of the last primary target. The left wing was the piece closest to the last primary target, and the right horizontal stabilator was the piece farthest away from the last primary target. Investigators used a handheld GPS to derive the bearings and distances from the main wreckage. The left wing was 0.4 nm (nautical miles) at 343 degrees. The outboard section of the left horizontal stabilizer was 0.5 nm at 002 degrees. A portion of the left inboard horizontal stabilator was at 0.7 nm bearing 008 degrees. The left flap was 0.7 nm at 025 degrees. The whole right horizontal stabilator was at 0.8 nm bearing 016 degrees.

The main wreckage consisted of the engine compartment, fuselage, rudder, and partially separated right wing. The principal impact crater (PIC) contained one propeller blade and was approximately 8 feet long, 4 feet across, and 1-foot deep. Paint shards were evident on a large rock bordering this dirt area. The main wreckage was 29 feet from the PIC. The cabin separated so that the control yokes and instrument panel stayed with the engine compartment, which was oriented along a magnetic bearing of 036 degrees. The inverted fuselage and right wing tip were aligned 275 and 240 degrees, respectively. The engine compartment was lying on its left side, and the left side had more damage than the right side.

The rudder mass balance and the top third of the rudder (above the top attach point) were not located. Both rudder stops were in place and undamaged, although the left stop's paint was chipped. Both cables were attached to the horn and traced to the cabin area.

The right horizontal stabilator's damage was different from the left. However, both tip sections, outboard of the trim tab, had similar damage.

The right stabilator was in one piece with the inboard leading edge bent up, while the inboard trailing edge trim tab and hinge wire bent down. Both upper stops fractured and separated while the lower stops were not damaged. The right stabilator's inboard attach point sheared flush; the outboard attach point was bent over almost flush with the spar. The box area was wrinkled from the front outboard area to the rear inboard area; the tip area was unwrinkled.

The left stabilator's inboard attaching point bent in and the bolthole was elongated. The outboard attach point bent in and fractured through the bolthole on an angular plane. The spar bent down and aft, and most of the bottom skin of the inboard section separated and was not found. Its box area was crushed and wrinkled from the inboard leading edge to the outboard trailing edge. Its rear spar bent down and the sheet metal unzipped along the trim tab hinge with the inboard hinge area peeling back. Its outer section separated longitudinally at a rib with the leading edge rivets pulled through the skin of the outer section and the center section of rivets pulled through the skin of the inboard section (on top and bottom). The

bottom skin and rivets bent down and aft, and this skin tore from the center inboard edge along a 45-degree angle toward the outboard trailing edge. Sheet metal on the skin of this outer section was unwrinkled.

Both wings exhibited symmetrical damage. Both inboard leading edges buckled in and bent down. Each wing tip was crushed back and neither wing exhibited chevrons.

The right wing remained attached at the leading edge and the spar sheared along a rivet line. Heads of a row of rivets along the outboard seam of the fuel tank pulled through the sheet metal. The rear attach bolt was still in its fitting. Retrievers cut both aileron cables; one had failed inside the wing in a bomb burst pattern. The bottom spar cap broke at the outer boltholes, deformed up, and the fracture surface was angular and grainy. Its webbing sheared along a rivet line, tore from the bottom up, and bent forward. The top spar cap bent up, the webbing zipped apart, and the rivet heads on top of the wing skin pulled through. The right aileron jammed at full up travel. Its operating arm was bent, as was the aft arm of the bellcrank, and both cables were attached to the bellcrank.

The left wing separated from the airplane. The rear attach bolt was still in the left wing. The left wing bottom spar cap was broken at the outer boltholes and deformed up. Its top spar cap bent up and fractured. A few inches outboard of the fracture, the top spar cap bent down and then up. The webbing was torn along a 45-degree angle and the fracture surface was irregular. Both the fore and aft aileron cables cut through the top skin of the wing to the second rib. The leading edge of the wing had a curved imprint proceeding outboard from the start of the wing taper. It was crushed in at the seam, and then dimpled in. Two witness marks at or beyond full travel were on the inboard end of the left aileron. The bottom mark sliced into the first rib and matches a paint chip on the structure. Metal on the top surface bent down and the structure bent up, and chipped paint was on both surfaces. The inboard operating arm impinged on the aileron's leading edge. The aileron bent up several inches outboard of the outer hinge and operating arm. The wing structure bent up in this area, and scratches on the bent up aileron matched up with the rivet pattern on the structure. The aileron cables were attached to the bellcrank and the bellcrank's forward tang bent back.

The right flap's operating rod fractured at both ends; both ends of the rod and the rod itself were bent. The manufacturer's representative determined the torque tube position indicated the flaps were up.

The left side of the fuselage had scrape marks and accordion crush damage in a curved imprint.

MEDICAL AND PATHOLOGICAL INFORMATION

The coroner for San Diego County completed an autopsy. The FAA Toxicology and Accident Research Laboratory performed toxicological testing of specimens of the pilot. The results of analysis of the specimens were negative for volatiles and tested drugs. Tests were not performed for carbon monoxide and cyanide.

TESTS AND RESEARCH

The FAA, Textron Lycoming, and the New Piper Aircraft Company were parties to the investigation. Investigators completed an examination of the wreckage under the supervision of the IIC on April 8, 1999.

Investigators slung the engine from a hoist for inspection. The left side of the engine sustained more damage than the right side. The investigators manually turned the propeller and obtained finger compression on all cylinders except cylinder No. 2, which sustained mechanical damage. Valves in undamaged cylinders moved in sequence, and the accessory gears turned freely.

The left magneto separated from its mounting pad; the fracture surface was irregular and granular. Pieces of its mounting flanges were secure under the mounting nuts. The right magneto was loose on its mounting pad. Both magnetos produced spark at all six posts when manually rotated. Investigators observed oil in the bottom spark plug on cylinder No. 1 and both spark plugs for cylinder No. 4. The fuel pump, with its lines attached, separated from its mounting flange. Its plunger arm actuated with rotation of the engine.

ADDITIONAL INFORMATION

The Safety Board released the wreckage to the owner's representative.

Pilot Information

Certificate:	Private	**Age:**	41, Male
Airplane Rating(s):	Single-engine Land	**Seat Occupied:**	Left
Other Aircraft Rating(s):	None	**Restraint Used:**	Seatbelt, Shoulder harness
Instrument Rating(s):	Airplane	**Second Pilot Present:**	No
Instructor Rating(s):	None	**Toxicology Performed:**	Yes
Medical Certification:	Class 3 Valid Medical--no waivers/lim.	**Last FAA Medical Exam:**	03/06/1997
Occupational Pilot:		**Last Flight Review or Equivalent:**	12/06/1997
Flight Time:	568 hours (Total, all aircraft), 524 hours (Total, this make and model), 39 hours (Last 90 days, all aircraft), 14 hours (Last 30 days, all aircraft), 3 hours (Last 24 hours, all aircraft)		

Aircraft and Owner/Operator Information

Aircraft Make:	Piper	**Registration:**	N9254Q
Model/Series:	PA-32R-301 PA-32R-301	**Aircraft Category:**	Airplane
Year of Manufacture:		**Amateur Built:**	No
Airworthiness Certificate:	Normal	**Serial Number:**	3246001
Landing Gear Type:	Retractable - Tricycle	**Seats:**	6
Date/Type of Last Inspection:	06/12/1998, Annual	**Certified Max Gross Wt.:**	3600 lbs
Time Since Last Inspection:	170 Hours	**Engines:**	1 Reciprocating
Airframe Total Time:	675 Hours at time of accident	**Engine Manufacturer:**	Lycoming
ELT:	Installed, activated, aided in locating accident	**Engine Model/Series:**	IO-540K1G5
Registered Owner:	ASSIST BUSINESS SERVICES INC	**Rated Power:**	300 hp
Operator:	ASSIST BUSINESS SERVICES INC	**Operating Certificate(s) Held:**	None

Meteorological Information and Flight Plan

Conditions at Accident Site:	Instrument Conditions	**Condition of Light:**	Night
Observation Facility, Elevation:	RNM, 1393 ft msl	**Distance from Accident Site:**	19 Nautical Miles
Observation Time:	1856 PDT	**Direction from Accident Site:**	233°
Lowest Cloud Condition:	Scattered / 600 ft agl	**Visibility**	9 Miles
Lowest Ceiling:	Broken / 1100 ft agl	**Visibility (RVR):**	0 ft
Wind Speed/Gusts:	21 knots /	**Turbulence Type Forecast/Actual:**	/
Wind Direction:	260°	**Turbulence Severity Forecast/Actual:**	/
Altimeter Setting:	29 inches Hg	**Temperature/Dew Point:**	7°C / 6°C
Precipitation and Obscuration:			
Departure Point:	DEER VALLEY, AZ (DVT)	**Type of Flight Plan Filed:**	IFR
Destination:	CARLSBAD, CA (CRQ)	**Type of Clearance:**	IFR
Departure Time:	1700 MST	**Type of Airspace:**	Class C

Wreckage and Impact Information

Crew Injuries:	1 Fatal	**Aircraft Damage:**	Destroyed
Passenger Injuries:	3 Fatal	**Aircraft Fire:**	None
Ground Injuries:	N/A	**Aircraft Explosion:**	None
Total Injuries:	4 Fatal	**Latitude, Longitude:**	

Administrative Information

Investigator In Charge (IIC):	HOWARD D PLAGENS
Additional Participating Persons:	DON SCARFONE; FAA Flight Standards District Office; SAN DIEGO, CA CHARLES LITTLE; NEW PIPER AIRCRAFT, INC.; CHINO HILLS, CA MARK PLATT; TEXTRON LYCOMING; VAN NUYS, CA
Investigation Docket:	NTSB accident and incident dockets serve as permanent archival information for the NTSB's investigations. Dockets released prior to June 1, 2009 are publicly available from the NTSB's Record Management Division at pubinq@ntsb.gov, or at 800-877-6799. Dockets released after this date are available at http://dms.ntsb.gov/pubdms/.