National Transportation Safety Board
Aviation Accident Final Report

Location:	Scottsdale, AZ	**Accident Number:**	LAX03FA076
Date & Time:	01/26/2003, 2023 MST	**Registration:**	N3636Q
Aircraft:	Piper PA-60-601P	**Aircraft Damage:**	Destroyed
Defining Event:		**Injuries:**	2 Fatal
Flight Conducted Under:	Part 91: General Aviation - Personal		

Analysis

The airplane collided with mountainous terrain 5 miles from the departure airport during a dark night takeoff. Review of recorded radar data found a secondary beacon code 7267 (the code assigned to the airplane's earlier inbound arrival) on the runway at 2021:08, with a mode C report consistent with the airport elevation. Two more secondary beacon returns were noted on/over the runway at 2021:12 and 2021:19, reporting mode C altitudes of 1,600 and 1,700 feet, respectively. Between 2021:08 and 2021:38, the secondary beacon target (still on code 7267) proceeded on a northeasterly heading of 035 degrees (runway heading) as the mode C reported altitude climbed to 2,000 feet and the computed ground speed increased to 120 knots. Between 2021:38 and 2021:52, the heading changed from an average 035 to 055 degrees as the mode C reports continued to climb at a mathematically derived 1,300 feet per minute and the ground speed increased to average of 170 knots. At 2022:23, the code 7267 target disappeared and was replaced by a 1200 code target. The mode C reports continued to climb at a mathematically derived rate of 1,200 feet per minute as the ground speed increased to the 180-knot average range. The computed average heading of 055 degrees was maintained until the last target return at 2022:53, which showed a mode C reported altitude of 3,500 feet. The accident site elevation was 3,710 feet and was 0.1 miles from the last target return. The direct point to point magnetic course between Scottsdale and Santa Fe was found to be 055 degrees. Numerous ground witnesses living at the base of the mountain where the accident occurred reported hearing the airplane and observing the aircraft's lights. The witnesses reported observations consistent with the airplane beginning a right turn when a large fireball erupted coincident with the airplane's collision with the mountain. No preimpact mechanical malfunctions or failures were found during an examination of the wreckage. The radar data establishes that the pilot changed the transponder code from his arrival IFR assignment to the VFR code 30 seconds before impact and this may have been a distraction.

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 an adequate altitude clearance from mountainous terrain. Contributing factors were dark night conditions, mountainous terrain, and the pilot's diverted attention.

Findings

Occurrence #1: IN FLIGHT COLLISION WITH TERRAIN/WATER
Phase of Operation: TAKEOFF - INITIAL CLIMB

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

Factual Information

1.1 History of Flight

On January 26, 2003, at 2023 mountain standard time, a Piper PA-60-601P, N3636Q, collided with mountainous terrain after takeoff from the Scottsdale, Arizona, airport. The airplane was owned and operated by the pilot under the provisions of 14 CFR Part 91 of the Federal Aviation Regulations. The airplane was destroyed in the impact and post crash fire sequence. The instrument rated private pilot and one passenger sustained fatal injuries. Night visual meteorological conditions prevailed with unrestricted visibility; however, the moon was not above the horizon. No flight plan was filed for the personal cross-country flight that originated in San Diego, California, at 1500 Pacific standard time as a flight to Santa Fe, New Mexico, with a planned stop in Scottsdale.

According to a Safety Board Sun and Moon location program for the geographic coordinates and altitude of Scottsdale, sunset occurred at 1758, and nautical twilight ended at 1854. At the time of the accident, the moon was 75 degrees below the northeastern horizon.

Information was obtained from the following Federal Aviation Administration (FAA) facilities: Western Pacific Air Traffic Quality Assurance Division, San Diego Automated Flight Service Station (AFSS), Phoenix Terminal Radar Approach Control (PHX TRACON), and Scottsdale Air Traffic Control Tower (ATCT).

The pilot requested and received a preflight weather briefing for the flight from San Diego AFSS and filed an instrument flight rules flight plan from San Diego to Scottsdale. According to the facilities who worked the flight, the instrument arrival into Scottsdale was routine and the airplane landed at 1811. The flight's inbound assigned discrete transponder code was 7267.

At 2016, the pilot contacted Scottsdale ATCT clearance delivery and requested VFR flight following to Santa Fe. The controller denied the pilot's request and advised him to contact Phoenix TRACON after he was airborne. The pilot contacted ground control at 2017, advising that he was ready to taxi for takeoff, and the flight was cleared to runway 03. At 2020, the pilot advised the local controller that he was ready for takeoff and asked for a right turn. The controller then cleared the flight for takeoff.

Recorded radar data from the FAA's Phoenix Terminal Radar Approach Control (TRACON) ARTS IIIA radar system was obtained and reviewed. At 2021:08, a secondary beacon code 7267 was observed on the runway at the Scottsdale airport with a mode C report of 1,500 feet. Two more secondary beacon returns were noted on/over the runway at 21:12 and 21:19, reporting mode C altitudes of 1,600 and 1,700 feet respectively. Between 21:08 and 21:38, the secondary beacon target (still on code 7267) proceeded on a northeasterly heading computed by the ARTS IIIA system of 035 degrees as the mode C reported altitude climbed to 2,000 feet and the computed ground speed increased to 120 knots. Between 21:38 and 21:52, the computed heading changed from an average 035 to 055 degrees as the mode C reports continued to climb at a mathematically derived 1,300 feet per minute and the ground speed increased to average of 170 knots. At 22:23, the code 7267 target disappeared and was replaced by a 1200 code target. The mode C reports continued to climb at a mathematically derived rate of 1,200 feet per minute as the ground speed increased to the 180-knot average range. The computed average heading of 055 degrees was maintained until the last target return at 22:53, which showed a mode C reported altitude of 3,500 feet. The accident site

elevation was 3,710 feet and was 0.1 miles from the last target return.

The direct point-to-point magnetic course between Scottsdale and Santa Fe was found to be 055 degrees.

Numerous ground witnesses living at the base of the mountain where the accident occurred reported hearing the airplane and observing the aircraft's lights. The witnesses reported observations consistent with the airplane beginning a right turn when a large fireball erupted coincident with the airplane's collision with the mountain.

1.2 Pilot Information

Review of the FAA airman and medical certification files disclosed that the pilot held a private pilot certificate with airplane ratings for single engine land, multiengine land and instruments. The most recent issuance of his certificate was dated May 2, 2000. A second-class medical certificate was issued to the pilot on May 3, 2002, and contained the limitation that correcting lenses be worn and that glasses for near and intermediate vision be carried.

The pilot's personal flight records were not recovered. On the May 3, 2002 application for his medical certificate, the pilot listed his total flight time as 1,450 hours. On an application for insurance coverage dated July 2, 2001, the pilot reported a total time of 1,400 hours, with 160 accrued in the accident airplane. Contained in the insurance file was a certificate that showed the pilot had completed ground and flight recurrency training in the accident airplane on August 9, 2001.

1.3 Aircraft Information

The aircraft, a Piper PA-60-601P, serial number 61P07858063398, was manufactured in 1980. The maintenance logbooks for the aircraft, engines, and propellers were not located. The investigation obtained and reviewed a certified copy of the registration and airworthiness files maintained by the FAA Civil Aircraft Registry office in Oklahoma City, Oklahoma. In addition, the investigation was able to identify an aircraft maintenance shop in Brigham City, Utah, that performed maintenance on the aircraft, and copies of the recent work orders for maintenance performed were obtained. With these sources, the maintenance and modification history of the airplane was partially reconstructed.

In 1996 the aircraft was acquired by the Machen Corporation and several modifications were performed under FAA approved Supplemental Type Certificates to convert the airplane to what is popularly known as a "Machen conversion." In pertinent part, the modifications included the removal of the original 290-horsepower Lycoming IO-540-S1A5 engines and installation of Lycoming TSIO-540-U2A engines that develop 350 horsepower.

The Aerostar Corporation acquired the airplane in 1998 and used the airplane as a factory demonstrator and test bed for various avionic system approvals by the FAA. During this time, a Bendix-King KFC255 auto pilot and flight director system was installed.

Other modifications performed at various times included the installation of a fuselage mounted auxiliary fuel tank and a GPS navigation system. The GPS system was approved for navigation in VFR and IFR conditions in the en route, terminal, and approach environments. The steering signal output of the GPS was channeled to the horizontal situation indicator (HSI).

The last work order from The Flight Shop, Inc., Brigham City, Utah, was dated June 21, 2002, and listed the completion of an annual inspection. The total time on the airframe at the time of

the annual was 2,574 hours. According to the firm's personnel, at the time of the annual a complete Airworthiness directive (AD) listing was performed, with all AD's applicable to the airplanes serial number accomplished.

Based on references in the FAA airworthiness files, the engines and propellers are estimated to have accrued between 800 and 900 hours since installation in the airframe. No information was available to determine the overhaul status of the engines.

The airplane was parked at a FBO on the Scottsdale airport for 2 hours following the flight's arrival at 1811. Interviews with ground service personnel at the Scottsdale FBO where the airplane was parked revealed that no services were provided.

Review of a FAA approved Pilot Operating Handbook for a Piper PA-60-601P applicable to the serial number of the accident airplane disclosed that at the ambient atmospheric conditions existing at the time of takeoff, the airplane would have had a typical climb rate of 1,500 feet per minute.

1.4 Meteorological Information

The weather observation taken at the Scottsdale airport at 2053 listed clear skies with a 10 mile visibility; winds from 010 at 3 knots; and an altimeter setting of 30.17 inches of mercury.

A Safety Board computer program was used to calculate the position of the sun and moon at the time of the accident. Sunset occurred at 1756, with the end of astronomical twilight at 1922. At 2023, the sun was 30 degrees below the western horizon. The moon was 75 degrees below the northeastern horizon.

There are no ground lights on the eastern side of the McDowell mountains that the airplane collided with which would provide a source to silhouette the rising terrain.

1.5 Wreckage and Impact

The accident site is located in the McDowell mountain range on the southwest facing slope of a mountain at the 3,780-foot mean sea level (msl) and about 100 feet below the ridge crest. The slope of the mountain at the site was about 60 degrees, with terrain consisting of large and small rocks of various diameters to 6 feet. Sparse scrub vegetation typical of the Arizona deserts was present widely distributed over the slope. The Scottsdale airport, elevation 1,510 feet msl, was visible about 5 miles distant on a magnetic bearing of 235 degrees.

An initial upsloping ground disturbance about 12 feet wide by 20 feet long was observed on the slope on a southeast line of bearing. This disturbance was characterized as a gouge-like depression in the ground. A median path of disturbed rocks, aircraft debris, and sooted fire residue was distributed over a horizontal distance of about 200 feet, with wreckage components scattered about 30 feet upslope and 100 feet downslope of the median debris field. The farthest piece of wreckage was the right engine, which was found about 300 feet downslope of the debris field.

The airplane was extensively fragmented and burned. Examination of the recovered airframe fragments disclosed that the principal vertical and horizontal crush deformation was to the lower fuselage and bottom wing skins.

Following initial on-site documentation, the extensively fragmented and burned wreckage was removed from the mountain and taken to the facilities of Air Transport, Phoenix, Arizona, for detailed examination.

1.6 Tests and Research

1.6.1 Airframe Structure

The Piper Corporation data plate was identified on the lower portion of the rear empennage tail cone and identified the airplane as model 601P, serial number 61P07858063398. A second data plate found near the Piper one identified the airplane as a Machen conversion, serial number 65-182, and listed Supplemental Type Certificate (STC) 1658NM.

The fuselage was extensively fragmented, with the only readily identifiable pieces consisting of the approximate upper 6 feet of the cabin roof section and the aft most 5 feet of the empennage, from the horizontal leading edge aft to the end of the tail. The roof section encompassed the cabin side windows and ran from the upper forward windshield boundary to the approximate rear cabin bulkhead. The main wing spar carry through and associated bulkhead, with the inboard sections of the left and right wings, were also identifiable in the wreckage; however, they were thermally damaged. About half of the remaining wreckage fragments were exposed to thermal damage.

The cabin entry door and window was identified in the debris. The cockpit/cabin entry door (located at the pilot's seating position) upper section was found fragmented and distorted. The corresponding fuselage doorframe was located in the wreckage debris. Both locking pins for the upper door were bent and distorted. The pinholes in the fuselage doorframe were ovaled and distorted on the outboard edge of the hole bores. The window latching mechanism was found in the locked position.

No slip stream influenced sooting or rivet shadowing was noted. All fire damage noted on the airframe components was random in character and consistent with the debris orientation on the mountain slope.

The inboard 6.5 feet of the right wing remained attached to the fuselage carry through and was moderately fire damaged. The right engine was separated from the nacelle mounts and was located downslope of the wreckage about 300 feet. The right main landing gear was visually in the down position with a corresponding position noted on the hydraulic actuator rod; however, it was noted that the entire hydraulic system had been compromised and no fluid remained in the cylinder (this system has no up locks, pressure only holds the gear in the wells). The right wing flap actuator was measured at 2 inches of extension (according to Piper technical documentation, 2.05 inches equals flaps up while 4.9 inches equals flaps 10 degrees). The right aileron was segmented into two pieces and separated from the outboard wing section. The right wing tip cap and pieces of structure encompassing the outboard wing section were identified in the recovered debris.

The moderately fire damaged inboard 6.5 feet of the left wing was separated from the carry through structure and found in the debris field. The left engine remained attached to this section of the wing by its associated control cables and fluid lines. The left main landing gear assembly was separated from the structure and the landing gear hydraulic cylinder was identified with the piston rod bent and trapped at a 6.75-inch extension, which is consistent with the gear in a retracted position. The left wing flap actuator was measured at 2.25 inches of extension (according to Piper technical documentation, 2.05 inches equals flaps up while 4.9 inches equals flaps 10 degrees). The left aileron was intact but buckled in a spanwise direction and separated from the outboard wing section. The left wing tip cap and pieces of structure encompassing the outboard wing section was identified in the recovered debris.

The left and right horizontal stabilizers, with elevators attached, remained secured to the empennage section. No impact damaged was observed to the right horizontal stabilizer or elevator. A chordwise pattern of thermal damage was observed on the upper skin of the right horizontal stabilizer over the outboard 24 inches, with more extensive thermal effects noted on the elevator than on the stabilizer leading edge. No thermal damage was observed on the corresponding bottom skin sections. The left horizontal stabilizer exhibited extensive leading edge crush damage. The elevator trim tab actuator was measured at 2.93 inches (according to Piper technical documentation, this equals a tab down deflection of 1/8).

The vertical stabilizer and rudder separated from the empennage, with the rudder secured to the stabilizer by the hinge and hangar assemblies. The rudder trim tab actuator measured 3.0 inches of extension (according to Piper technical documentation, 3.1 inches equals neutral).

1.6.2 Engine Examinations

The engines were identified as Lycoming TSIO-540-U2A, which develop 350 horsepower at 2,500 rpm.

1.6.2.1 Right Engine

The right engine, serial number L-9722-61A, was not fire damaged. Cylinder Nos. 1 and 2 were impact damaged. The crankshaft flange was intact, with bending and tearing noted over a 30-degree arc through two propeller hub bolt holes. Ductile crushing was evident on the exhaust risers. The left magneto and propeller governor were missing. The mounting flange for the propeller governor remained secured to the case, with overload fractures evident. The left magneto's mounting clamps remained attached at their respective studs. Rotation of the crankshaft produced accessory gear train continuity and strong thumb compression on cylinder Nos. 1, 5, and 6. Debris was noted under the exhaust valve seats on cylinder Nos. 3 and 4. Cylinder No. 2 exhibited impact damage, with the rocker box and internal components missing. The right magneto was secure on its mounting pad with impact damage evident on the cap assembly. Hand rotation produced sparks at five of the six posts. The top spark plugs, Champion RHB-36S, were removed; no mechanical damage was noted and the electrodes and posts exhibited a light ash gray coloration. All cylinders were examined internally with a borescope, with no evidence of foreign object ingestion or detonation, and with all valves intact. No oil residue was observed and the internal cylinder domes and piston crowns exhibited normal combustion deposits and coloration.

The flow divider was in place; disassembly revealed no internal contamination and the diaphragm was intact. Fuel was present. The fuel injector nozzles were not obstructed at both the fuel and air bleed ports. The fuel servo was displaced and fire damaged.

No contamination was noted on the oil suction screen. The oil filter was damaged by impact and fire.

The right and left turbo chargers for the right engine were intact and rotated smoothly. The impellor blades for the compressor and turbine sections were undamaged. The exhaust gas path exhibited a light tan coloration and was free of oil residue.

The vacuum pump drive was intact and the pump rotated with the accessory gear section freely during rotation of the crankshaft. The unit was removed from the engine and disassembled. The block and vanes were intact.

1.6.2.2 Left Engine

The left engine, serial number L-9723-61A sustained impact and fire damage, with all accessories burned. Cylinder Nos. 2 and 4 sustained impact damage to the top of the rocker box covers. The crankshaft flange was intact, with one propeller bolt flange bushing displaced aft and opposite the direction of normal rotation. The bottom of the engine was crushed and sheared off aft. Ductile bending and crushing was noted to the exhaust risers and tubes. The right magneto was consumed by fire; however, the mounting flange remained in the clamps. The fire damaged left magneto remained in the clamps. Both ignition harnesses were destroyed by fire. The crankshaft could not be rotated. The accessory case was removed, with all gears present. The crankshaft dowel pin and bolt were in place. Oil pump was removed, with no foreign debris found and both impellors intact. The top spark plugs, Champion RHB-36S, were removed; no mechanical damage was noted and the electrodes and posts exhibited a light ash gray coloration. With the exception of the No. 2 intake rocker arm, which was impact damaged, all others were undamaged and without unusual operating signature. All cylinders were examined internally with a borescope, with no evidence of foreign object ingestion or detonation, and with all valves intact. No oil residue was observed and the internal cylinder domes and piston crowns exhibited normal combustion deposits and coloration.

In order to view the internal components of the engine, 5/16th-inch holes were bored into the top of the crankcase in locations consistent with the rotational planes of each connecting rod. Utilizing a lighted borescope, each of the connecting rods were visually examined with no evidence of heat distress or mechanical failure. The camshaft was intact and the lobes exhibited no unusual wear patterns.

The flow divider was in place; disassembly revealed no internal contamination and the diaphragm was intact. Fuel was present. The fuel injector nozzles were not obstructed at both the fuel and air bleed ports. The fuel servo was displaced and fire damaged.

The oil suction screen was destroyed. The oil filter was damaged by impact and fire.

The right and left turbo chargers for the left engine were thermally damaged and would not rotate. The impellors for the compressor and turbines were intact and the impellor housings were distorted due to thermal effects. The impellor blades for the compressor and turbine sections were undamaged. The exhaust gas path exhibited a light tan coloration and was free of oil residue.

The vacuum pump drive was melted. The unit was removed from the engine and disassembled. The block and vanes were intact.

1.6.3 Propellers

Both propeller assemblies were three bladed Hartzell HC-C3YR-2UF models. Both assemblies had separated from their respective engines crankshaft flanges, with distortion evident in the bolt hole bores opposite the direction of propeller rotation. Both propeller hubs were impact damaged, with segments broken out. The fracture patterns of the hub flange sections were unique for each engine, and the respective propeller mounting positions on the engines were determined from matching the fracture face patterns. Three blades were noted to have separated from the hubs, two from the left propeller and one from the right. The last facility to overhaul the propellers, Precision Propellers, Boise, Idaho, was identified from a sticker on the blades. By telephone, Precision Propellers identified by serial number which blades had been installed in which hub.

Examination of the piston positions within the hubs and the extension of the pitch change rods

from each from each hub revealed that the pistons of each hub were symmetrically about 2 inches from the top of the hub (pitch change rods measured 2.125 inches out of the hub). According to Hartzell, this corresponds to a blade pitch of about 23 degrees, which is in the operating pitch range near the high power point.

1.6.3.1 Left Propeller

The left propeller hub was serial number CK4377A, with blade serial numbers D60734, D60735, and D60800. All three blades were bent aft and in a chordwise direction (leading edge tip aft) opposite that of normal rotation, with a sine wave pattern evident in the trailing edges.

Blade D60800 remained in the hub and had about 10 inches of the outboard tip end torn off. The tip was recovered in the debris field of the accident site. Heavy leading edge damage and gouging was evident on the tip section. The remaining inboard blade section from the fracture point to the butt end was torsionally twisted and curved toward the cambered side.

Blade D60734 had about 18 inches of the outboard tip end torn off, with heavy leading edge damage evident to the separated tip section. The blade exhibited a torsional twist toward the cambered side. The blade broke out of the hub in a direction opposite that of normal rotation.

Blade D60735 broke out of the hub in a direction opposite that of normal rotation. The entire blade span was present. Heavy leading edge damage and gouging was present.

1.6.3.2 Right Propeller

The right propeller hub was serial number CK4372A, with blade serial numbers D60855, D666847, and D66959. All three blades were bent aft and in a chordwise direction (leading edge tip aft), which is opposite that of normal rotation, with a sine wave pattern evident in the trailing edges.

Blade 66959 remained in the hub and had about 10 inches of the outboard tip end torn off. The tip was recovered in the debris field of the accident site. Heavy leading edge damage and gouging was evident on the tip section and over a distance about 10 inches inboard of the tear. The blade was curled toward the cambered side.

Blade 60855 broke out of the hub in a direction opposite that of normal rotation. The entire blade span was present. Heavy leading edge damage and gouging was present. The outboard 10 inches of the blade was torn off and was not recovered. The blade was torsionally twisted and bent opposite the cambered side

Blade 66847 remained in the hub and the entire blade was present. Heavy leading edge damage and gouging was noted. The blade was bent opposite the cambered side and a sine wave was present in the trailing edge.

1.6.3 Fuel System

The wing and fuselage tanks were destroyed. However, the stainless steel tank auxiliary tank was crushed.

According to Piper technical documentation and the system information contained in the flight manual, there are four fuel shutoff valves in the system that are electrically operated. Two main valves, one for each engine, are located on the fuselage tank sump and are either on or off for their respective engines. Two additional valves located in that same area of the fuselage are

for cross feed operations between the left and right wing tanks and are normally in the off position. Three fuel valve assemblies were located in the wreckage debris separated from their respective structural attach points. One valve was in the off position, one was in the on position, and the remaining valve assembly was missing from the assembly housing. The area of the instrument panel containing the electrical switches for the fuel valves was destroyed.

Both boost pumps were recovered in the debris field, with one impact damaged and the second exhibiting evidence of fire exposure. The pumps were connected to a battery in an attempt to functionally test them. The impact damaged pump would not turn and it was observed that the motor was bent slightly and not aligned perpendicularly to the pump housing. The fire exposed pump functioned.

1.6.4 Cockpit Documentation

The instrument panel was destroyed, with all instruments liberated from their panel mounts. Two altimeters were found in the debris field; one with a square shaped housing and the second of conventional round shape. The square shaped instrument fit the opening on the left side of the instrument panel, while no round openings were found on that side. The openings on the right side of the panel were round in shape. The kolesman setting for the square shaped instrument 30.17 and the setting for the round instrument was 30.12.

The throttle, propeller, and mixture control levers remained in the center pedestal. All six of the levers were in the full forward position.

The pilot's attitude indicator was identified in the debris field and had sustained impact damage. The unit was disassembled and the gyro rotor and it's housing documented. Rotational scoring was observed on the top of the gyro rotor and on the side. Corresponding scoring marks were noted on the gyro rotor housing.

1.6.5 Control System

With the exception of sections of the push pull tubes for the elevator, rudder, and the ailerons still within the respective portions of the empennage and wings, all of the control system push pull tubes were fractured, separated, and found distributed within the wreckage debris field. All of the tubes exhibited compression bending of the tubes and the threaded portions of the rod end eyes. The cockpit controls and all associated push pull/torque tubes were fragmented.

1.7 Medical and Pathological

The pilot sustained fatal injuries in the accident and an autopsy was conducted by the Miracopa County Medical Examiners Office with specimens retained for toxicological examination by the FAA Civil Aeromedical Institute. The results of the toxicological tests were negative for alcohol and all screened drug substances.

1.8 Additional Information

The wreckage was released to the insurance company representing the pilot's estate on January 30, 2003, at the conclusion of the examinations. No components were retained.

Pilot Information

Certificate:	Private	**Age:**	57, Male
Airplane Rating(s):	Multi-engine Land; 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 2 Valid Medical--w/ waivers/lim.	**Last FAA Medical Exam:**	05/03/2002
Occupational Pilot:		**Last Flight Review or Equivalent:**	08/09/2001
Flight Time:	1450 hours (Total, all aircraft), 160 hours (Total, this make and model)		

Aircraft and Owner/Operator Information

Aircraft Make:	Piper	**Registration:**	N3636Q
Model/Series:	PA-60-601P	**Aircraft Category:**	Airplane
Year of Manufacture:		**Amateur Built:**	No
Airworthiness Certificate:	Normal	**Serial Number:**	61P07858063398
Landing Gear Type:	Retractable - Tricycle	**Seats:**	6
Date/Type of Last Inspection:	06/21/2002, Annual	**Certified Max Gross Wt.:**	6000 lbs
Time Since Last Inspection:		**Engines:**	2 Reciprocating
Airframe Total Time:	2574 Hours as of last inspection	**Engine Manufacturer:**	Lycoming
ELT:	Installed, not activated	**Engine Model/Series:**	TSIO-540-U2A
Registered Owner:	NDB Equipment Finance, Inc.	**Rated Power:**	350 hp
Operator:	Duane E. Shrontz	**Operating Certificate(s) Held:**	None

Meteorological Information and Flight Plan

Conditions at Accident Site:	Visual Conditions	**Condition of Light:**	Night/Dark
Observation Facility, Elevation:	SDL, 1510 ft msl	**Distance from Accident Site:**	5 Nautical Miles
Observation Time:	2053 MST	**Direction from Accident Site:**	235°
Lowest Cloud Condition:	Clear	**Visibility**	10 Miles
Lowest Ceiling:	None	**Visibility (RVR):**	
Wind Speed/Gusts:	3 knots /	**Turbulence Type Forecast/Actual:**	/
Wind Direction:	10°	**Turbulence Severity Forecast/Actual:**	/
Altimeter Setting:	30.18 inches Hg	**Temperature/Dew Point:**	17°C / 0°C
Precipitation and Obscuration:			
Departure Point:	Scottsdale, AZ (SDL)	**Type of Flight Plan Filed:**	None
Destination:	Santa Fe, NM (SAF)	**Type of Clearance:**	VFR
Departure Time:	2020 MST	**Type of Airspace:**	Class D

Airport Information

Airport:	Scottsdale (SDL)	**Runway Surface Type:**	Asphalt
Airport Elevation:	1510 ft	**Runway Surface Condition:**	Dry
Runway Used:	3	**IFR Approach:**	None
Runway Length/Width:	8249 ft / 100 ft	**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:**	On-Ground
Total Injuries:	2 Fatal	**Latitude, Longitude:**	33.665833, -111.831111

Administrative Information

Investigator In Charge (IIC):	JEFF RICH	**Report Date:**	12/28/2004
Additional Participating Persons:	Joseph K Remington; Federal Aviation Administration; Scottsdale, AZ Mark Platt; Textron Lycoming; Williamsport, PA Robert Martellotti; The New Piper Aircraft Company; Vero Beach, FL Tom McCreary; Hartzell Propeller, Inc.; Piqua, OH		
Publish Date:			
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/.		