

1.

**Narrative Type: NTSB PRELIMINARY NARRATIVE (6120.19)**

On October 21, 2011, about 0410 Pacific daylight time, N422HP, a Piper PA46R-350T airplane, sustained substantial damage as a result of a forced landing following a loss of engine power near Paso Robles, California. The pilot, the sole occupant of the airplane, suffered minor injuries. The airplane is registered to Central Valley Mortgage Services of Porterville, California. The cross-country business flight was being operated in accordance with Title 14 Code of Federal Regulations Part 91, and an instrument flight rules (IFR) flight plan was filed and activated. The flight departed the Porterville Municipal Airport (PTV), Porterville, California about 0300, with Paso Robles Municipal Airport (PRB), Paso Robles California, as its destination.

Local law enforcement personnel who interviewed the pilot shortly after the accident, reported to the National Transportation Safety Board investigator-in-charge (IIC) that the pilot stated that while on an instrument approach he experienced a partial loss of engine power, and that when attempts to restore power were unsuccessful he initiated a forced landing to an open field about 3.5 miles north of PRB. The airplane came to rest upright with both wings having sustained substantial damage.

The airplane was recovered to a secure storage facility pending further investigation

2.

**Narrative Type: NTSB PRELIMINARY NARRATIVE (6120.19)**

On August 19, 2011, at 1555 eastern daylight time, a Piper PA-46-500TP, N133SR, was substantially damaged while landing at Manassas Regional Airport (HEF), Manassas, Virginia. The certificated private pilot and the passenger were not injured. Visual meteorological conditions prevailed. An instrument flight plan had been filed for the flight, from Cobb County Airport - McCollum Field (RYY), Atlanta, Georgia, to Manassas. The personal flight was conducted under the provisions of 14 Code of Federal Regulations Part 91.

Airport personnel reported that the airplane landed on runway 16L. According to the pilot, the landing was "normal" with the touchdown on the main landing gear. About 3 to 5 seconds later, after the nose landing gear touched down, there was a "shift" of the airplane to the left. The pilot applied maximum braking and right rudder to no avail; the airplane veered off the left side of the runway.

The pilot also noted that the airplane had recently undergone an annual inspection. Since then, about every other flight he had seen a "Gear Warning" light sometime during the flight.

Wind, recorded at the airport at the time of the accident, was from 220 degrees magnetic at 4 knots.

3.

**Narrative Type: NTSB PRELIMINARY NARRATIVE (6120.19)**

On August 6, 2011, at 1700 Eastern Daylight Time, a PA-46-310P, N469CC, was substantially damaged during a forced landing at the Curtis L. Brown Field Airport (EYF), Elizabethtown, North Carolina. The certificated airline transport pilot and his passenger were uninjured. Visual meteorological conditions prevailed, and no flight plan was filed for the personal local flight conducted under Title 14 Code of Federal Regulations Part 91.

According to the pilot, he departed EYF after topping off the fuel tanks. While climbing through approximately 1,100 feet above mean sea level and turning from the crosswind leg of the traffic pattern to the downwind leg of the traffic pattern, the engine started making a "whining" sound. The pilot then began to "move the throttle around." The engine however did not respond. It then lost power, and the airplane began to descend. The pilot then turned towards the runway and feathered the propeller. He kept the landing gear up until "the last second" so that he would make the runway. Once he was assured that he would make it back to the runway, he put the landing gear handle in to the gear down position. The landing gear however, still had not fully extended when he touched down on the runway. The airplane then skidded on its belly down the runway and came to rest.

Post accident examination of the airplane by a Federal Aviation Administration inspector revealed that the airplane had been modified from its original design and the original reciprocating engine had been replaced with a Pratt & Whitney Canada PT-6A-34, turbo propeller engine. Further examination also revealed that the airplane's pressure vessel had been substantially damaged during the forced landing.

The airplane's engine was retained by the NTSB for further examination.

4.

#### **Narrative Type: NTSB PRELIMINARY NARRATIVE (6120.19)**

On July 24, 2011, about 0920 central daylight time, a Piper PA-46-350P, N46TW, operated and piloted by a private pilot, sustained substantial damage when it impacted powerlines and terrain during takeoff at the Rantoul National Aviation Center Airport-Frank Elliott Field (TIP), Rantoul, Illinois. A post-impact ground fire ensued. The pilot and two passengers sustained fatal injuries. The personal flight was operating under 14 Code of Federal Regulations Part 91. Visual meteorological conditions prevailed at the time of the accident. An instrument flight rules (IFR) flight plan was on file. The flight was originating from TIP at the time of the accident and was destined for Sarasota/Bradenton International Airport (SRQ), near Sarasota, Florida.

The day prior to the accident the pilot obtained a weather briefing and filed an IFR flight plan for the flight to SRQ through an internet service.

A witness, who worked at the fixed base operator, stated that the pilot performed the preflight inspection of the airplane in a hangar. An estimated 80 pounds of luggage was loaded behind the airplane's back seat and the airplane was towed out of the hangar. The witness said that the pilot's wife told the pilot that she had to use the restroom. The pilot said to hurry because a storm front was coming. The engine start was normal. Both passengers were sitting in the rear forward-facing seats when the airplane taxied out.

A witness at the airport, who was a commercial pilot, reported that he observed the airplane takeoff from runway 27. He said that the airplane started to turn to the south. He indicated that the landing gear was up when the airplane was about 500 feet above the ground. The witness stated that a weather front was arriving at the airport and that the strong winds from the northwest appeared to push the tail of the plane up and the nose down. The airplane descended and impacted powerlines and terrain where the airplane subsequently caught on fire. The airplane's engine was producing power until impact.

The pilot, age 56, held a Federal Aviation Administration (FAA) private pilot certificate with airplane single-engine land and instrument airplane ratings. FAA records showed that the pilot's last medical examination was completed on February 25, 2010, when he was issued a third-class medical certificate with limitations for corrective lenses. The pilot reported that he had accumulated 1,850 hours of total flight time at the time of the application for that medical certificate.

N46TW, a Piper PA-46-350P, serial number 4622071, was an all-metal airplane with semimonocoque fuselage and conventional design. The airplane was equipped with a pressurized cabin, wing flaps, spoilers, a constant speed propeller, and retractable tricycle landing gear. The airplane was configured to seat six occupants, including two cockpit positions and four cabin positions. The airplane had a certified maximum takeoff weight of 4,318 pounds.

The airplane was powered by a 350-horsepower Textron Lycoming TIO-540-AE2A, turbocharged, horizontally opposed, fuel injected, reciprocating engine, with serial number L-12770-61A. The engine was shipped from its manufacturer on May 4, 2007. The engine was originally installed N534P. It was removed and was installed on N46TW on June 11, 20011. An engine logbook endorsement showed that the accident engine had accumulated a total of 200.7 hours since new at the time of its installation on N46TW. The airplane had a Hobbs meter reading of 609.5 hours and the airplane had accumulated 2580.5 hours of total time at the time of the engine installation.

The airplane's propeller was a three-bladed Hartzell HC-I3YR-1E model with hub serial number

HK1295B. Its blades' serial numbers were 1129, 1130, and 1132.

The airplane's last annual inspection was completed on February 4, 2011. An airplane logbook endorsement showed that the airplane had accumulated 2,560.4 hours of total time at the time of the annual inspection and the airplane had a Hobbs meter reading of 589.4 hours.

At 0915, the recorded weather at TIP was: wind 300 degrees at 14 knots gusting to 21 knots; visibility 10 statute miles; sky condition scattered 5,000 feet, scattered 10,000 feet; temperature 29 degrees C; dew point 24 degrees C; altimeter 30.06 inches of mercury; remarks lightning in the distant north and northwest.

Powerlines were found separated and laying on the ground on the north side of a field, which was located about one-half mile south of runway 27 near the intersection of South Century Boulevard and Tuskegee Avenue. The airplane came to rest on that field south of the powerlines. A debris path started and was present from the separated powerlines up to wreckage. The distance of that path was about 177 feet long and it was about 75 feet wide. The magnetic heading of the path from the separated lines to the main wreckage was about 150 degrees. The field's grass along this path was charred. One propeller blade separated from its hub and came to rest on Tuskegee Avenue about 30 feet east of the start of the path. The remaining two blades were found embedded in terrain about 35 feet and about 38 feet south of the start of the path. A navigation light cover was found about 88 feet south of the path's start. The engine and forward fuselage came to rest on their left sides near the end of the path about 177 feet south of the path's start. The left wing separated from the fuselage and was found in the debris path about 15 feet northwest of the fuselage. The right wing was found on the east side of the fuselage. The empennage came to rest southwest of the fuselage. Sections of both wings and sections of the fuselage were discolored, deformed, and melted.

An on-scene examination of the wreckage was conducted. Engine control cables were traced from the cabin to the engine. Flight control cables were traced from the location of the cabin controls to their respective control surfaces bellcranks. All flight control cable separations exhibited a broomstraw appearance and flight control continuity was established. The main landing gears were in their wheel wells. The nose landing gear was located under the engine. The flap jackscrew exhibited 16 exposed threads, consistent with a 10-degree flap setting. The elevator trim had seven visible threads, consistent with a neutral trim setting. The fuel tank selector valve and its linkage were deformed and partially melted. The linkage position was consistent with the selection of the right fuel tank. The cabin door's pins were found extended. A section of powerline was found in the area of the right wing root.

The engine's accessories were discolored and deformed. The engine accessories were removed. The engine crankshaft was rotated when a hand tool rotated an accessory gear. All cylinders but the number two cylinder produced a thumb compression when the crankshaft was rotated. Valve covers were removed and some melted, aluminum-colored, media was found around the lower portion of the number two cylinder's exhaust rocker. The melted media was removed and the crankshaft was rotated. Normal valve train operation was observed. The number two cylinder's intake spring did not return its valve to its seated position. A lever was used to lift the valve into its seated position and the cylinder produced a thumb compression. The turbocharger was discolored, deformed, and melted. No engine or airframe pre-impact anomalies were detected.

5.

#### **Narrative Type: NTSB PRELIMINARY NARRATIVE (6120.19)**

On June 26, 2011, about 0930 mountain standard time, a Piper PA-46-350P, N9246M, sustained substantial damage when the nose landing gear collapsed during landing roll at the Flagstaff Pulliam Airport (FLG), Flagstaff, Arizona. The airplane was registered to N9246M LLC, Las Vegas, Nevada, and was operated by the pilot under the provisions of Title 14 Code of Federal Regulations Part 91. The airline transport rated pilot and the two passengers were not injured. Visual meteorological conditions prevailed and no flight plan was filed for the personal flight. The cross-country flight originated from Las Vegas, Nevada, about 0810 with an intended destination of FLG.

During a telephone conversation with the National Transportation Safety Board investigator-in-charge, the pilot reported that just after landing on runway 21, the airplane encountered a gust of wind. Despite her control inputs, the airplane exited the left side of the runway and the nose wheel landing

gear collapsed. Subsequently, the airplane came to rest nose low about 150 feet left of the runway surface.

Examination of the airplane by a Federal Aviation Administration (FAA) inspector revealed that the engine firewall was bent.

6.

**Narrative Type: NTSB PRELIMINARY NARRATIVE (6120.19)**

On June 2, 2011, about 1300 mountain standard time, a Piper PA-46-310P, N712MK, experienced a landing gear extension system failure during approach to the Lake Havasu City Airport, Lake Havasu City, Arizona. The airplane was substantially damaged as it slid to a stop on the runway. Neither the airline transport pilot nor passenger was injured. The airplane was registered to Sea Air Holdings, LLC. The personal flight was operated under the provisions of 14 Code of Federal Regulations Part 91. Visual meteorological conditions prevailed, and an instrument flight plan was filed. The flight originated from Portland, Oregon, about 0830.

The pilot reported that, despite performing the emergency gear extension procedure, the landing gear remained stuck in the retracted position in the wheel wells. The airplane landed gear up on runway 32. A lower fuselage bulkhead was subsequently observed ground down. An examination of the landing gear operating system is pending.

7.

**Narrative Type: NTSB PRELIMINARY NARRATIVE (6120.19)**

On March 7, 2011, at 2008, a Piper PA 46-350P, experienced an inflight fire near Chico, Texas. The airline transport pilot, the sole occupant, was not injured. The airplane sustained substantial thermal damage to the engine section and forward fuselage. The airplane was registered to and operated by Christian Air Brotherhood, Wichita Fall, Texas, under the provisions of 14 Code of Federal Regulations Part 91 as a personal flight. Visual meteorological conditions prevailed for the flight, which operated on a visual flight rules flight plan. The flight originated from Fort Worth about 1950.

According an initial statement provided by the pilot, the airplane was cruising at 4,500 feet mean sea level, when he detected a change in engine noise along with fluctuations in the engine rpms. The pilot began to divert to the nearest airport, when the engine began to run rough. Shortly thereafter, the pilot began to smell and see smoke enter the airplane cabin. The smoke increased and the pilot elected to perform a forced landing on a highway. The airplane's nose landing gear did not extend and the airplane slid to a stop on the main landing gear and nose section. The airplane was retained for further examination.

8.

**Narrative Type: NTSB PRELIMINARY NARRATIVE (6120.19)**

On May 3, 2011, at 1740 mountain daylight time, the pilot of a Piper PA46-500TP, N46ME, aborted the takeoff at Rock Springs-Sweetwater County Airport, Rock Springs, Wyoming, after the right main landing gear tire failed. The airline transport pilot operated the airplane under the provisions of Title 14 Code of Federal Regulations, Part 91. The pilot was not injured, and the right aileron was substantially damaged. Visual meteorological conditions prevailed, and an IFR flight plan had been filed.

The pilot reported that during the takeoff roll, as the airplane approached 70 knots, it started slowly pulling to the right. He immediately aborted the takeoff, and stopped the airplane on the runway using brakes and reverse propeller thrust. The pilot inspected the airplane and found the right main landing gear tire blown, and the right aileron buckled at the center hinge location.

9.

**Narrative Type: NTSB PRELIMINARY NARRATIVE (6120.19)**

On April 1, 2011, at 1820 central daylight time, a Piper PA-46-350P, N146DG, registered to Fountain Blue Management Services LLC, incurred substantial damage to both wings during a precautionary landing at Greenwood Le-Fore Airport (GWO), Greenwood, Mississippi, following a partial loss of engine power during climb to cruise. The certificated airline transport pilot and passenger were not injured. The personal flight was conducted under the provision of 14 Code of Federal Regulations Part 91. Visual meteorological conditions prevailed and an instrument rules flight plan was filed for the planned flight to Lakefront Airport (NEW), New Orleans, Louisiana. The flight originated from Memphis International Airport (MEM), Memphis, Tennessee at 1720.

The pilot reported that while climbing through 13,000 feet above ground level, he heard a loud "pop" and observing a large reduction in manifold pressure. The pilot decided to make a precautionary landing, declared an emergency to the air traffic control (ATC) controller, and initiated a slow descent to the nearest suitable airport recommend by ATC. The pilot asked the controller if there was a mechanic at that airport, and the controller stated no. The controller informed the pilot that GWO had a control tower and a mechanic. The pilot then decided to divert to GSO, which was further than the original alternate airport.

He obtained an amended clearance from ATC for GWO and continued his descent to avoid a cloud layer. The passenger visually identified GWO, but they were a "little high" and the pilot planned on flying a downwind leg to final approach for runway 18; however, the oil pressure was low and decreasing rapidly, so the pilot decided to land straight ahead on runway 18. He lowered the landing gear to assist in losing altitude and the oil pressure gauge indicated "0" with the oil warning light illuminated. The pilot continued to run the engine until he thought he could make the runway, and then he shut the engine down and completed the emergency landing checklist. He raised the landing gear, but the airspeed decreased. He lined up with a grassy area prior to the runway to avoid the instrument landing system and then extended the landing gear and flaps. The airplane touched down hard and collided with a ditch.

The airplane was recovered to GWO pending further examination by the engine and airframe manufacture under the supervision of a Federal Aviation Administration Inspector.

10.

**Narrative Type: NTSB PRELIMINARY NARRATIVE (6120.19)**

On March 29, 2011, about 1604 eastern daylight time, a Piper PA46-350P, N619VH, impacted a field southeast of the departure end of runway 21 at Custer Airport (TTF), Monroe, Michigan. Visual meteorological conditions prevailed at the time of the accident. The 14 CFR Part 91 flight was operating on an instrument rules flight plan. The pilot and two passengers were fatally injured. The flight departed from Bedford County Airport, Bedford, Pennsylvania, about 1426, and was en route to TTF.

A witness reported that the airplane was unusually low and still flying at a high rate of speed with its landing gear retracted when it flew over Stewart Road. The airplane continued at a high rate of speed as it crossed over the trees adjacent to runway 21.

Radar data indicates that the airplane's speed was 132 knots, at an altitude of 800 feet, and a heading of 207 degrees when it was about 0.5 miles from runway 21 (4,997 feet by 100 feet, grooved asphalt).

Examination of runway 21 noted 37 marks within the runway surface consistent with propeller slash marks that began about 2,000 feet down runway 21. Material consistent with material from the airplane propeller was located in the area of the slash marks.

Examination of the main wreckage revealed that the landing gear was in the retracted position and the flaps were in the retracted position.

11.

**Narrative Type: NTSB FINAL NARRATIVE (6120.4)**

The pilot reported that he landed the airplane in a right crosswind and wind gusts. He applied a right crosswind correction, flared, and touched down with the right main landing gear on the runway. When the pilot removed the right crosswind control corrections, the airplane landed hard and as the nose wheel settled onto the runway, the airplane swerved to the left. The nose landing gear collapsed, resulting in substantial damage to the firewall and forward baggage compartment supports. The pilot reported no preimpact mechanical problems with the airplane.

12.

**Narrative Type: NTSB PRELIMINARY NARRATIVE (6120.19)**

On January 9, 2011, at 1358 mountain standard time, a Piper PA-46-500TP, single-engine turboprop airplane, N5365D, sustained substantial damage following a loss of directional control and subsequent runway excursion during landing roll at Phoenix Sky Harbor International Airport (KPHX), Phoenix, Arizona. The private pilot and three passengers were not injured. The airplane was registered to Fiesta Foods of Hermiston, Oregon, and operated by the pilot. Visual meteorological conditions prevailed, and an instrument flight rules flight plan was filed for the Title 14 Code of Federal Regulations (CFR) Part 91 personal flight. The flight originated from Boeing Field, Seattle, Washington, with an intermediate fuel stop in Reno, Nevada. The pilot's planned destination was Phoenix Sky Harbor International Airport.

The pilot stated that shortly after touchdown on the dry, hard-surface runway, the airplane veered right. He stated that the airplane touched down on the mains first and when the nose wheel settled to the ground, a significant vibration was noted. Shortly after the nose wheel touched down, the airplane veered right of runway centerline. The pilot attempted to correct; however, the airplane continued to veer right and subsequently exited the runway. The main landing gear collapsed during the excursion.

Examination of the airplane by an Inspector from the FAA Scottsdale Flight Standards District Office revealed substantial damage to wing and fuselage.

13.

**Narrative Type: NTSB PRELIMINARY NARRATIVE (6120.19)**

**HISTORY OF FLIGHT**

On January 9, 2011, approximately 1340 mountain standard time, a single-engine Piper PA 46-350P, N727MC, impacted mountainous terrain in the Sangre de Cristo Mountains near Westcliffe, Colorado. The private pilot and passenger were both fatally injured. The airplane was substantially damaged. The airplane was owned and operated by a private individual under the provisions of 14 Code of Federal Regulations Part 91 as a cross-country flight. The airplane descended through instrument meteorological conditions (IMC), which operated on an instrument flight rules flight plan. The airplane departed the Phoenix-Deer Valley Airport (DVT), Phoenix, Arizona, approximately 1200 and was en route to the Pueblo Memorial Airport (PUB), Pueblo, Colorado.

The airplane disappeared from radar while en route to PUB. An alert notice (ALNOT) was issued for the missing airplane and a search began. On the afternoon of December 10, 2011, search teams located the airplane.

A translation of radar data obtained from the FAA depicted the airplane level at FL 250 while en route to DREXL. At 1329:46, The airplane descended from FL250 at about 1,200 feet per minute (fpm). At 1333:25, the airplane turned right and increased the descent rate to approximately 3,000 fpm at an altitude reading of 17,600 feet. At 1333:54, the airplane climbed about 5,000 fpm to approximately 19,200 feet. The airplane then descended at a rate in excess of 7,000 fpm with the last radar return at 1334:33 at an altitude of 12,200 feet (about 2,500 feet above ground level).

**PERSONNEL INFORMATION**

The pilot, age 66, held a private pilot certificate for airplane single-engine land, airplane multi-engine land, and instrument airplane. A review of the pilot's log book revealed that he had logged over 3,030 hours, with at least 467 hours in the same make and model as the accident airplane. The pilot's last flight review was completed on October 2, 2008. On July 17, 2009, the pilot received a JetProp directed checkout in the JetProp DLX airplane. In addition, the pilot flew an instrument proficiency check on June 10, 2010. Neither the JetProp checkout nor the instrument check were flown as a flight review. On February 26, 2009, the pilot was issued a third class medical certificate with the restriction, "must wear corrective lenses for near and distant vision."

In the previous year, the pilot had logged 37 instrument approaches. A majority of the approaches (29), in addition to the pilot's instrument proficiency flight, were flown in a Mooney M20K. The pilot's Mooney had the original navigation equipment with the addition of a Garmin GNS 530W GPS/Nav/Comm and a Garmin GDL 69A Satellite Weather receiver.

#### AIRCRAFT INFORMATION

The single-engine airplane, serial number 4636085, was manufactured in 1997. The airplane was powered by a 750 horsepower Pratt & Whitney Canada PT6A-35 engine, driving a Hartzell four-bladed constant speed HC-E4N-3N propeller, that was installed on October 19, 2006, by a Supplemental Type Certificate (STC). This STC (ST00541SE), changed the factory engine to the PT6A as a JetProp DLX, installed by Rocket Engineering Corporation on October 19, 2006. A concurrent 100-hour and annual inspection was conducted on January 13, 2010, at a total airframe time of 3,594.6 hours and an engine total time of 327.4 hours. Utilizing the pilot's log book, the airplane would have accrued almost 3,734 hours at the time of the accident.

A fixed base operator at DVT had last serviced the airplane fuel tanks on the morning of the accident with 104 gallons of Jet-A and an ice inhibitor. Personnel at the fixed base operator reported that the tanks were full of fuel prior to the airplane's departure.

The airplane's avionics consisted of a Garmin G600 Integrated Avionics System combined with a Garmin GDL 69A, a Garmin GNS 530W, and a Garmin GNS 430W GPS/Nav/Comm.

#### METEOROLOGICAL INFORMATION

A review of the weather present on the day of the accident revealed that a frontal wave developed two low pressure systems, one over central Colorado and the other over northern New Mexico. The accident site was in the immediate vicinity of a stationary front between the two low pressure systems. In addition, an upper air sounding observation conducted from site number 72469, Denver, Colorado, supported the potential for turbulence above 17,000 feet with a probability of moderate turbulence between 17,300 and 18,000 feet. The sounding also supported the potential for mountain wave activity and identified several potential waves, one centered at 19,331 feet with conditions favorable for updrafts/downdrafts of 750 feet per minute (fpm), and capable of producing moderate to severe turbulence. In addition, the freezing level was determined to be a ground level with conditions favorable for ice production in cloud.

A review of Geostationary Operational Environmental Satellite number 13 (GOES-13) and Weather Surveillance Radar-1988 (WSR-88D) data revealed the airplane rapidly descended into terrain shortly after entering cumuliform clouds with corresponding "very light" precipitation. Pilot reports (PIREPs) confirmed the presence of mountain wave activity near the accident flight. Based off of prevailing weather at weather reporting stations in Alamosa, Colorado, and Pueblo, Colorado, visual meteorological conditions would have existed below the IMC layer.

The pilot received an abbreviated weather briefing from the Prescott Contracted Flight Service Station on the morning of the accident flight. The conversation's transcript confirmed that the pilot received weather conditions for PUB and Amarillo International Airport (AMA), Amarillo, Texas. In addition, the pilot received advisories for high level turbulence between flight level (FL) 180 and FL230 and an advisory for moderate ice between the freezing level (varied from surface to 9,000 feet) and FL180.

#### COMMUNICATIONS

Radio transcripts from the Denver Air Route Traffic Control Center (ARTCC) revealed that the pilot

checked in at 1947:36 and requested to fly direct to DREXL (an intersection point, not an initial approach fix) for the ILS runway 8L at PUB. The pilot was issued a clearance to procedure direct DREXL then direct PUB. At 2027:05 the pilot was issued a clearance to descend, at pilot's discretion, to 17,000 feet. The pilot acknowledged the clearance and stated that he intended to start his descent in two minutes. No further transmissions were made by the pilot.

#### WRECKAGE AND IMPACT INFORMATION

The wreckage of the airplane was located in a heavily wooded area of the Sangre de Cristo Mountains at a measure altitude of 9,733 feet mean sea level and was aligned on a 290 degree magnetic heading. Several tall trees surrounded the perimeter of the wreckage and a few trees displayed scuffing down the bark. All airplane components were accounted for at the accident site.

The lower portion of the fuselage displayed extensive crushing damage with a rippling of the lower fuselage (belly) skin. Starting at an area between the left wing's flap and aileron and the wing tip, the wing was heavily damaged, twisted, and torn. Paint transfers on rocks found to the left of the fuselage depicted a left wing strike. The right wing's leading edge was crushed rearwards with multiple semi-circular impacts on the leading edge consistent with tree strikes. At the right wing's mid-span the wing was heavily damaged and torn. The empennage remained attached to the fuselage and was twisted slightly to the left and bent upwards; it rested against a tree which displayed scraped bark down the surface of the tree. The fuel tanks were breeched and the odor of fuel was present at the accident site. Flight control continuity was established from the flight control surfaces to an area leading to the control column and rudder pedals.

The propeller remained attached to the engine. All four blades displayed S-bending, curling, and chord-wise scratches. The spinner cone displayed rotational scoring and scratches. All three landing gear and the flaps were found in the retracted position. The throttle quadrant was crushed, but both the throttle and propeller were near the full forward position. The airspeed indicator displayed 150 knots. The vertical speed indicator read a 4,000 feet per minute (fpm) descent. The fuel selector was positioned for the right tank.

An engine examination was conducted by a technical adviser from Pratt & Whitney Canada under the auspices of the NTSB. In the compressor section, the first and second stage blades displayed circumferential rubbing with corresponding scoring of the stage shrouds. Stator vanes were deformed into the direction of rotation with signatures of contact between the vanes and the rotor. The compressor turbine shroud, compressor turbine, power turbine shroud, and power turbine blades displayed circumferential rubbing and scoring, consistent with engine operation at the time of impact. No preimpact failures were noted with the engine.

#### MEDICAL AND PATHOLOGICAL INFORMATION

An autopsy was performed on the pilot on January 13, 2011, by the El Paso County Coroner's Office as authorized by the Huerfano County Coroner. The manner of death was ruled an accident.

The Federal Aviation Administration (FAA) Civil Aerospace Medical Institute (CAMI), Oklahoma City, Oklahoma, performed forensic toxicology on specimens from the pilot. The specimens were marked putrefied. The report noted the following:

333 (mg/dL, mg/hg) ETHANOL detected in Liver  
16 (mg/dL, mg/hg) ETHANOL detected in Muscle  
10 (mg/dL, mg/hg) ETHANOL detected in Lung  
NO ETHANOL detected in Heart  
NO ETHANOL detected in Spleen  
NO ETHANOL detected in Kidney

Notes: The ethanol found in this case is from sources other than ingestion.

Metoprolol detected in Liver  
Metoprolol detected in Kidney

The United States National Library of Medicine lists metoprolol as a medication "used alone or in

combination with other medication to treat high blood pressure.” The pilot had last reported treatment of high blood pressure with irbesartan.