Aviation Investigation Final Report

Location:	Seligman, Arizona	**Accident Number:**	WPR10FA305
Date & Time:	June 18, 2010, 22:26 Local	**Registration:**	N155FT
Aircraft:	Hawker Beechcraft Corporation A36	**Aircraft Damage:**	Substantial
Defining Event:	Controlled flight into terr/obj (CFIT)	**Injuries:**	1 Fatal
Flight Conducted Under:	Part 91: General aviation - Personal		

Analysis

The pilot departed on a visual flight rules flight on a dark night, and family members reported that he had been drinking alcohol and was under emotional distress. Toxicological testing gave no conclusive results as to the pilot's alcohol intoxication level, if any, at the time of the accident. Radar data identified as the airplane's flight track showed a progression from east to west, with the radar targets showing a gradual descent to the altitude of the mountainous terrain in the area, and then ending in the vicinity of the accident site. Very few ground reference lights existed in the area of the accident site and the moon was in its first quarter and would not have provided any significant illumination of the terrain. The radar data was consistent with the pilot's loss of situational awareness during the dark night and the airplane gradually descending into terrain. Examination of the recovered airframe and engine components revealed no evidence of preimpact mechanical malfunction.

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 clearance from mountainous terrain in the dark night.

Findings

Personnel issues	Situational awareness - Pilot
Environmental issues	Dark - Effect on personnel
Environmental issues	Mountainous/hilly terrain - Not specified
Aircraft	Altitude - Not attained/maintained

Factual Information

History of Flight

Enroute-cruise	Controlled flight into terr/obj (CFIT) (Defining event)

HISTORY OF FLIGHT

On June 18, 2010, at 2226 mountain standard time (MST), a Hawker Beechcraft Corporation A36, N155FT, collided with terrain approximately 10 miles northeast of Seligman, Arizona. The commercial pilot, who was also the registered owner of the airplane, operated it under the provisions of Title 14 Code of Federal Regulations Part 91. The pilot was fatally injured and the airplane sustained substantial damage. Night visual meteorological conditions prevailed and no flight plan was filed.
An Alert Notice (ALNOT) was issued on June 22. The wreckage was located at 1030 MST on June 23.

According to a family member of the pilot, he had departed from Los Alamos, New Mexico, about 1930, and flew to Santa Fe, New Mexico, where he obtained fuel for the airplane at 2000. The family member indicated that the pilot had been drinking alcohol, was under emotional distress, and had departed without providing details regarding his destination.

A Los Alamos Police Department investigation report (Case Number: 2010-0686) was reviewed. On June 16, the pilot had begun binge drinking. The drinking continued throughout the week and on June 18, the pilot had an altercation with a family member. The pilot left the house and went to the airport where family members stated that he subsequently departed in his airplane. The family had waited to report him missing until June 22 due to his past history and they believed he would return.

Radar data obtained from Hill Air Force Base consistent with the airplane's route of flight and area of the accident site, showed a radar track that moved from east to west and in a gradual descent during the last portion of the flight. At 2224, the altitude showed 8,800 feet mean sea level (msl), and the altitude continued to decrease until the last target at 2246 at 7,100 feet msl, approximately 1/4-mile east of the accident site.

The accident site was located in mountainous desert terrain at an elevation of approximately 7,050 feet msl. The terrain rose out of the desert, with areas of isolated mountains within the vicinity that rose to similar heights. The base of these mountains and the vast stretches of generally flat terrain that connected them were approximately 1,000 feet lower than the mountain tops.

PERSONNEL INFORMATION

The pilot, age 54, held a commercial pilot certificate for airplane single-engine land and instrument. He held a second-class medical certificate issued on August 18, 2008, with the limitation that he must wear corrective lenses. The pilot's logbook was located at the accident site and showed that the pilot had about 1,179 total flight hours following the last logged flight on June 13, 2010. The pilot reported 151 hours of night flight time.

According to the pilot's FAA Airman file, on August 18, 1997, the pilot attempted to depart from an unlit, dirt airstrip at night. The airplane departed the runway and the left fuel tank ruptured, resulting in substantial damage (NTSB Accident FTW97LA315). The pilot was arrested at the accident site for being intoxicated.

AIRCRAFT INFORMATION

The low-wing, retractable-gear airplane, serial number (SN) E-1922, was manufactured in 1981. It was powered by a Teledyne Continental Motors IO-550-B(55) engine, SN 913071, and equipped with a Hartzell HC-C4YF-IE/F7063Q, SN GK93, constant-speed propeller. Review of copies of the maintenance logbooks showed that an annual inspection was completed on July 6, 2009, at a total tachometer reading of 593.2 hours, and airframe total time of 3,730.8 hours. Due to damage sustained to the airplane during the accident sequence, no tachometer or Hobbs recordings were obtained at the accident site. On February 14, 2010, at a total tachometer time of 683.4 hours, the oil and oil filter were changed. The most recent maintenance performed was the replacement of the right side engine exhaust on April 14, 2010, at a total tachometer time of 716.5 hours. According to the pilot's flight logbook, he had flown approximately 17 hours in the airplane since the exhaust system maintenance.

MEDICAL INFORMATION

The County of Coconino Medical Examiner completed an autopsy on the pilot. The cause of death was multiple blunt force trauma and the manner was listed as undetermined. The FAA Bioaeronautical Research Laboratory completed toxicological testing on specimens from the pilot. Carbon monoxide and cyanide testing were not performed. No tested drugs were detected in muscle. Ethanol, methanol, N-butanol, and N-propanol were detected in the muscle, lung, and heart. Putrefaction was noted.

METEOROLOGICAL INFORMATION

The closest official aviation weather was a routine aviation weather report (METAR) was for H.A. Clark Memorial Field Airport, Williams, Arizona, located 34 nautical miles east of the accident site. At 2235, the following conditions were reported: sky conditions, clear; visibility, 10 miles; wind from 120 degrees at 3 knots; temperature, 17 degrees Centigrade; dew point, -8 degrees Centigrade; and altimeter, 30.20 inches of Mercury.

According to the US Naval Observatory Astronomical Applications Department for Kingman,

Arizona, the moon was in its first quarter, sunset occurred at 1953 and the end of civil twilight was at 2023. Moon transit was at 1825 and moonset was at 0023 on June 19.

WRECKAGE AND IMPACT

The airplane impacted an eastern side of a mountain at an elevation of approximately 7,050 feet msl. The first identified point of impact contained propeller pieces, fragments of engine components, and small sections from each wing. The debris field continued in a west-southwesterly direction and contained all major portions of the wreckage. The engine was located on the western side of the mountain, approximately 900 feet from the first identified point of impact and
down a steep slope.

The fragmented airplane wreckage was examined throughout the debris field and all four corners identified. Control continuity from the empennage to forward carry-through spar was established. The control column had separated from the airplane and was identified in the debris field. The flaps were in the retracted position; the landing gear was in a retracted position. According to the Hawker Beechcraft Corporation representative, the trim setting suggested 10 degrees nose-up trim. The site elevation was 7,050 feet mean sea level, and the debris field was 240 degrees magnetic bearing, on a 20-30 degree sloped hillside. The airplane was equipped with a Garmin 530 avionics unit. The aileron and elevator control consisted of a throw over control system with a dual arm installed. A plastic vodka bottle was found in the debris field. The bottle was not breached and contained a residual amount of liquid consistent in color and smell with its labeled contents.

The Teledyne Continental Motors engine was examined. The oil pickup tube for the oil case was identified near the first identified point of impact, as well as multiple pieces of the crankcase. The oil pump was not located. The starter, vacuum pump, portion of a magneto, pushrods, and pieces of propeller were identified. An oil trail followed from the initial impact point to the location of the engine. Several impact craters were identified. The number 5 cylinder was missing and the barrel remained intact. All of the cylinders sustained excessive impact damage. All accessories, other than the fuel manifold valve, had separated from the engine. The crankshaft propeller flange remained attached. Propeller blades were located near the first identified point of impact and near the engine core. The blades had separated from the hub, and were gouged and in multiple pieces.

A follow up examination of the engine occurred on June 30, at Air Transport, Phoenix, Arizona, with a representative from Teledyne Continental Motors and a Federal Aviation Administration inspector.

Examination of the recovered airframe, flight control system, and engine components revealed no evidence of preimpact mechanical malfunction.

ADDITIONAL INFORMATION

Controlled Flight Into Terrain (CFIT)

On March 1, 2003, the Federal Aviation Administration issued Advisory Circular number 61-134, "General Aviation Controlled Flight Into Terrain Awareness." The circular was issued to the general aviation community to "...emphasize the inherent risk that controlled flight into terrain (CFIT) poses for general aviation (GA) pilots."

The circular defines CFIT as a situation which "...occurs when an airworthy aircraft is flown under the control of a qualified pilot, into terrain (water or obstacles) with inadequate awareness on the part of the pilot of the impending collision."

According to the CFIT circular, "situational awareness" is defined as "...when the pilot is aware of what is happening around the pilot's aircraft at all times in both the vertical and horizontal plane. This includes the ability to project the near term status and position of the aircraft in relation to other aircraft, terrain, and other potential hazards."

Use of Alcohol or Drugs

14 CFR Part 91.17 Alcohol or drugs states, in part, the following:

(a) No person may act or attempt to act as a crewmember of a civil aircraft—
(1) Within 8 hours after the consumption of any alcoholic beverage;
(2) While under the influence of alcohol;
(3) While using any drug that affects the person's faculties in any way contrary to safety; or
(4) While having an alcohol concentration of 0.04 or greater in a blood or breath specimen. Alcohol concentration means grams of alcohol per deciliter of blood or grams of alcohol per 210 liters of breath.

Pilot Information

Certificate:	Commercial	**Age:**	54,Male
Airplane Rating(s):	Single-engine land	**Seat Occupied:**	Left
Other Aircraft Rating(s):	None	**Restraint Used:**	
Instrument Rating(s):	Airplane	**Second Pilot Present:**	No
Instructor Rating(s):	None	**Toxicology Performed:**	Yes
Medical Certification:	Class 2 With waivers/limitations	**Last FAA Medical Exam:**	August 18, 2008
Occupational Pilot:	No	**Last Flight Review or Equivalent:**	July 11, 2009
Flight Time:	1179 hours (Total, all aircraft), 35 hours (Last 90 days, all aircraft), 4 hours (Last 30 days, all aircraft)		

Aircraft and Owner/Operator Information

Aircraft Make:	Hawker Beechcraft Corporation	**Registration:**	N155FT
Model/Series:	A36	**Aircraft Category:**	Airplane
Year of Manufacture:		**Amateur Built:**	
Airworthiness Certificate:	Normal	**Serial Number:**	E-1922
Landing Gear Type:	Retractable - Tricycle	**Seats:**	6
Date/Type of Last Inspection:	July 6, 2009 Annual	**Certified Max Gross Wt.:**	3650 lbs
Time Since Last Inspection:	3871 Hrs	**Engines:**	1 Reciprocating
Airframe Total Time:	3731 Hrs as of last inspection	**Engine Manufacturer:**	Teledyne Continental
ELT:	C91 installed, not activated	**Engine Model/Series:**	IO-550-B
Registered Owner:	Gary Cavasos	**Rated Power:**	285 Horsepower
Operator:	Gary Cavasos	**Operating Certificate(s) Held:**	None

Meteorological Information and Flight Plan

Conditions at Accident Site:	Visual (VMC)	**Condition of Light:**	Night
Observation Facility, Elevation:	CMR,6680 ft msl	**Distance from Accident Site:**	34 Nautical Miles
Observation Time:	22:35 Local	**Direction from Accident Site:**	90°
Lowest Cloud Condition:	Clear	**Visibility**	10 miles
Lowest Ceiling:	None	**Visibility (RVR):**	
Wind Speed/Gusts:	3 knots /	**Turbulence Type Forecast/Actual:**	/
Wind Direction:	120°	**Turbulence Severity Forecast/Actual:**	/
Altimeter Setting:	30.2 inches Hg	**Temperature/Dew Point:**	17°C / -8°C
Precipitation and Obscuration:	No Obscuration; No Precipitation		
Departure Point:	Santa Fe, NM (SAF)	**Type of Flight Plan Filed:**	None
Destination:		**Type of Clearance:**	None
Departure Time:	19:00 Local	**Type of Airspace:**	

Wreckage and Impact Information

Crew Injuries:	1 Fatal	**Aircraft Damage:**	Substantial
Passenger Injuries:		**Aircraft Fire:**	None
Ground Injuries:	N/A	**Aircraft Explosion:**	None
Total Injuries:	1 Fatal	**Latitude, Longitude:**	35.620555,-112.806663

Administrative Information

Investigator In Charge (IIC):	Dunks, Kristi
Additional Participating Persons:	Michael Murphy; Federal Aviation Administration; Las Vegas, NV Andrew Swick; Teledyne Continental Motors; Sacramento, CA Paul Yoos; Hawker Beechcraft Corporation; Wichita, KS
Original Publish Date:	May 26, 2011
Last Revision Date:	
Investigation Class:	Class
Note:	The NTSB traveled to the scene of this accident.
Investigation Docket:	https://data.ntsb.gov/Docket?ProjectID=76413