



National Transportation Safety Board Aviation Accident Final Report

Location:	Tatum, NM	Accident Number:	FTW02FA195
Date & Time:	07/01/2002, 1315 MDT	Registration:	N835K
Aircraft:	Beech H-18	Aircraft Damage:	Destroyed
Defining Event:		Injuries:	1 Fatal
Flight Conducted Under:	Part 91: General Aviation - Personal		

Analysis

A witness reported hearing the distinctive sound of a radial engine just before the crash, and right after that a loud crashing noise. The witness observed a large cloud of dust forming, subsequently saw the plane parts scattering from west to east across the pasture, and then observed the fuselage come to rest. A second witness saw the airplane hit the ground and a cloud of dust form about one-quarter of a mile long and as high as a highline wire. The witness said that after the dust settled he saw scattered plane parts, a highline wire down, and a wing part spilling fuel. The witness also stated that the airplane was traveling from west to east and looked horizontal at impact. At 12:59:57, approximately 10 minutes prior to the time of the accident, air traffic control radar identified a target 8 nautical miles northwest of the accident site at an altitude of 5,500 feet mean sea level (MSL). However, this target could not be positively identified as the accident airplane. A postmortem examination of the pilot by a Medical Investigator reported significant natural disease findings included coronary atherosclerosis (hardening and narrowing of the arteries), and chronic thyroiditis (inflammation of the thyroid gland). Both of these diseases can cause sudden cardiac problems including an arrhythmia or heart attack.

Probable Cause and Findings

The National Transportation Safety Board determines the probable cause(s) of this accident to be: The failure of the pilot to maintain clearance.

Findings

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

Findings

1. (C) CLEARANCE - NOT MAINTAINED - PILOT IN COMMAND

Factual Information

HISTORY OF FLIGHT

On July 1, 2002, approximately 1315 mountain daylight time, a Beech H-18 twin-engine airplane, N835K, was destroyed when it impacted terrain while descending near Tatum, New Mexico. The commercial pilot, sole occupant of the airplane, sustained fatal injuries. The airplane was registered to a private individual. Visual meteorological conditions prevailed for the 14 CFR Part 91 personal cross-country flight, and no flight plan was filed. The flight originated from the Taos Regional Airport, Taos, New Mexico, at an unspecified time.

According to the Pilot/Operator Aircraft Accident Report (NTSB form 6120.1/2), the owner of the airplane reported the pilot had flown he and his wife to Taos on the morning of the accident, arriving at approximately 1105 after an uneventful flight. The owner said the pilot stopped the airplane and helped them unload their luggage into a rental vehicle. The owner further stated that he and his wife left the airport at approximately 1130 but did not observe the departure of their airplane.

In a telephone interview, and in a written statement provided to the NTSB investigator-in-charge (IIC), a witness who was unloading feed at a farm house approximately 300 yards from the accident site reported hearing the "distinctive sound of a radial engine" just before the crash. He also stated that right after that his fellow worker exclaimed "Oh my gosh!" The witness further reported that he turned around and heard a loud "crashing noise," and that he saw a big cloud of dust forming above the truck trailer. The witness stated that he then saw the plane parts scattering from west to east across the pasture, and then saw the fuselage come to rest.

In a written statement provided to the NTSB IIC, a second witness, who was working with the first witness, reported seeing the airplane hit the ground. The witness also reported that he saw a cloud of dust about one-quarter of a mile long and as high as a highline wire. The witness stated that when the dust settled he saw scattered plane parts, a highline wire down, and a wing part spilling fuel. The witness said the airplane was traveling from west to east and "looked horizontal at impact."

At 12:59:57, the Albuquerque Air Route Traffic Control Center radar (ARTCC), identified a target approximately 8 nautical miles northwest of the accident site at an altitude of 5,500 feet mean sea level (MSL). However, this target could not be positively identified as the accident airplane.

PERSONNEL INFORMATION

The pilot held a commercial pilot certificate with airplane single and multi-engine land and instrument ratings. Additionally, he held airframe and power plant mechanic certificates. He also possessed a second class medical certificate dated April 24, 2002, with the limitation that he must wear corrective lenses.

According to the airplane's owner, the pilot had accumulated in excess of 30,000 hours of flying time, of which more than 500 hours were in the Beech 18, and more than 10,000 hours in multi-engine aircraft. The pilot had completed his most recent biennial flight review on March 25, 2001.

AIRCRAFT INFORMATION

The 1965-model, twin radial engine, conventional-retractable gear airplane, was issued its original airworthiness certificate on April 19, 1965. The airplane was equipped with two Pratt and Whitney R985 AN-1 engines rated at 450 horsepower. The right engine, serial number 42-58578, was installed on N835K on August 3, 1994. Logbook records did not indicate how much time was on the engine. The left engine, serial number JP-205571, underwent a major overhaul on October 5, 2000; however, logbooks did not indicate when the engine was installed on the airframe.

The aircraft underwent its most recent annual inspection on August 23, 2001, with a total time on the airframe of 6,466.4 hours. The owner estimated that the total time since the last inspection was less than 200 hours.

METEOROLOGICAL INFORMATION

At 1250, the reported weather conditions at the Lea County Regional Airport, Hobbs, New Mexico, located 57 nautical miles southeast of the accident site, reported wind 150 degrees at 15 knots, visibility 15 statute miles, sky clear, temperature 33 degrees C, dew point 16 degrees C, and an altimeter setting of 30.10 inches of Mercury.

WRECKAGE AND IMPACT INFORMATION

Examination of the aircraft wreckage by the NTSB investigator-in-charge (IIC) and a representative from the Federal Aviation Administration, revealed that the accident site was situated in a flat pasture area approximately 20 nautical miles northwest of Tatum, New Mexico, at latitude 033 degrees 26.49 minutes North and longitude 103 degrees 36.27 minutes West. The initial impact heading was oriented on a magnetic heading of 085 degrees at an altitude of 4,250 feet mean sea level (MSL). The beginning of the energy path began with ground scars from propeller strikes oriented on a magnetic heading of 070 degrees and was 1,286 feet in length from the initial ground impact scar to the final airplane component. The energy path was along flat scrub brush ground. Both wings, the left rudder and vertical stabilizer, and both engines had separated from the airplane. The cabin and cockpit areas were destroyed. All six-propeller blades had separated from their respective propeller hubs.

The main fuselage came to rest on its left side at the 689-foot mark (all distances measured from the initial ground impact scar) on a magnetic heading of 080 degrees. The elevator, horizontal stabilizer, right rudder and right vertical stabilizer remained partially attached to the empennage. The final airplane component along the energy path was a landing gear tire, located at the 1,296-foot mark.

The left rudder and left vertical stabilizer were separated from the empennage and located at the 365-foot mark and 30 feet left of the energy path. The rudder was intact with minimal damage, while the vertical stabilizer was twisted and bent. The right rudder and right vertical stabilizer exhibited numerous punctures, tears and rips, and remained attached to the tail section of the airplane. The left half of the elevator was separated from the left half of the horizontal stabilizer but remained attached to the empennage. It was also bent downward approximately 30 degrees resting on the ground. The left half of the horizontal stabilizer remained attached to the tail section of the aircraft. It was also bent, twisted and exhibited leading edge crushing. The right half of the elevator and the right half of the horizontal stabilizer remained intact and connected to the empennage.

The left wing, located at the 350-foot mark, was bent and twisted with the fuel tank breached. The left flap, located at the 325-foot mark and 15 feet left of the energy path was separated

from the left wing. The left aileron was also separated from the left wing and located at the 218-foot mark along the energy path.

The right wing, including the aileron, separated from the airframe and came to rest at the 515-foot mark along the energy path centerline. The right wing was bent and twisted, and the fuel tank was breached. The right wing flap was located at the 520-foot mark. The inboard 4 feet of the flap was bent and twisted, while the outer portion remained intact.

The left engine was separated from the airframe and destroyed. The front of the engine was located at the 762-foot mark and 140 feet left of the energy path. The separated accessory section of the engine was located at the 1,100-foot mark and 100 feet to the right of the energy path. The propeller hub was separated from the crankshaft and all three propeller blades had separated from their respective propeller hubs. Each blade exhibited twisting and chordwise scratching. Four cylinders were found separated from the engine while the remaining five cylinders remained attached, exhibiting post-impact damage.

The right engine was destroyed. The engine was located at the 950-foot mark in line with the energy path, separated from the airframe and resting in an upright position. The front of the engine was oriented toward the initial impact point. The propeller hub assembly remained attached to the engine at the crankshaft. All three propeller blades had separated from their respective propeller hubs and exhibited twisting and chordwise scratching. Six cylinders were found separated from the engine. The accessory section remain attached to the rear of the engine, while the exhaust system had separated from the engine.

Due to the extent of damage to the airframe, control system continuity to the cockpit could not be verified. Aileron and left rudder system continuity could not be verified due to post-impact damage. Control cable continuity was established to the right rudder and elevator from the aft bulkhead area. All control cable breaks were consistent with overload failure.

MEDICAL AND PATHOLOGICAL INFORMATION

An autopsy on the pilot was performed at the Office of the Medical Examiner, University of New Mexico Health Science Center, Albuquerque, New Mexico, on July 2, 2002. The cause of the pilot's death was reported as massive bodily trauma. As reported by Mr. Jeffrey S. Nine, M.D., Medical Investigator, under "Evidence of Injury" is noted ".....the body has massive trauma...." Under "Internal Examination" is noted ".....Cardiovascular System: The remaining heart tissue weighs 350 grams. The heart is completely avulsed from the pericardial sac, and is extensively macerated..... the remaining heart tissues show calcification of the identifiable segments of coronary artery, with focal severe stenosis of a proximal main coronary artery.... Endocrine System: The thyroid gland is slightly fibrotic, light tan...." Under "Microscopic Examination" is noted "Thyroid: Moderate chronic inflammation. Heart... No significant pathologic changes...."

A Forensic Toxicology Fatal Accident Report was prepared by the FAA Civil Aeromedical Institute, Oklahoma City, Oklahoma. The report indicated the following results:

Carbon Monoxide could not be tested for.

No Cyanide detected in the blood.

Ethanol detected in the blood was the result of postmortem ethanol formation and not from

the ingestion of ethanol.

0.188 (ug/ml, ug/g) Diphenhydramine detected in blood.

Diphenhydramine detected in liver.

Diphenhydramine, commonly referred to as Benadryl, is an antihistamine used to relieve the symptoms of hay fever, such as runny nose, irritated eyes, and a rash or itchy skin. It may also relieve the effects of motion sickness. In addition, it may also cause adverse side effects such as drowsiness and reduced mental alertness, as well as impaired coordination, blurred vision, and distressed or painful upper abdomen.

2.232 (ug/ml, ug/g) Acetaminophen detected in blood.

Acetaminophen, commonly referred to as Tylenol, is used for the temporary relief of minor aches and pains associated with headache, muscular aches, backache, minor arthritis pain, common cold, toothache, and for the reduction of fever.

TESTS AND RESEARCH

On August 6, 2002, the NTSB investigator-in-charge traveled to Air Transport Inc., Phoenix, Arizona, to conclude documentation of the aircraft's cockpit area which was not possible at the accident site. The examination revealed that the left and right propeller controls were in the full forward position, the right and left throttle controls were in the mid range position, with the left control bent back to the right approximately 150 degrees. The right engine fuel selector was positioned directly in line with the nose of the airplane, while the left engine fuel selector was positioned directly in line with the tail of the airplane. The position of each engine fuel selector relative to its respective fuel tank could not be determined. Both the left and right mixture controls were found in their full forward position, with the left control bent to the right 90 degrees. The wing flap position switch was in the UP position, the tail wheel lock control and the parking brake control were in the FULL DOWN position, and the landing gear switch was in the UP position. The left engine oil shutoff control was in the full down position, while the right engine oil shutoff control was completely out of its housing and bent 90 degrees to the right. The ventilation airscoop heater switch guard was broken off, and the switch was in the OFF position. Both left and right cowl flap switches were in the OFF position and the cabin cold air control was in the FULL DOWN position. The left and right electrical subpanels, as well as the avionics panel were destroyed. All of the pilot's flight instruments were destroyed. The aileron trim control was found in the neutral position.

ADDITIONAL INFORMATION

The airplane wreckage was released to a representative of the owner on August 12, 2002.

Pilot Information

Certificate:	Commercial	Age:	68, Male
Airplane Rating(s):	Multi-engine Land; Single-engine Land	Seat Occupied:	Left
Other Aircraft Rating(s):	None	Restraint Used:	Seatbelt
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:	04/24/2002
Occupational Pilot:		Last Flight Review or Equivalent:	03/25/2001
Flight Time:	30000 hours (Total, all aircraft), 500 hours (Total, this make and model), 30000 hours (Pilot In Command, all aircraft)		

Aircraft and Owner/Operator Information

Aircraft Make:	Beech	Registration:	N835K
Model/Series:	H-18	Aircraft Category:	Airplane
Year of Manufacture:		Amateur Built:	No
Airworthiness Certificate:	Normal	Serial Number:	BA-724
Landing Gear Type:	Retractable - Tricycle	Seats:	9
Date/Type of Last Inspection:	08/23/2001, Annual	Certified Max Gross Wt.:	10000 lbs
Time Since Last Inspection:	200 Hours	Engines:	2 Reciprocating
Airframe Total Time:	6466 Hours as of last inspection	Engine Manufacturer:	Pratt & Whitney
ELT:	Installed, not activated	Engine Model/Series:	R985 AN-1
Registered Owner:	James Ratliff Hurt	Rated Power:	450 hp
Operator:	James Ratliff Hurt	Operating Certificate(s) Held:	None

Meteorological Information and Flight Plan

Conditions at Accident Site:	Visual Conditions	Condition of Light:	Day
Observation Facility, Elevation:	HOB, 3661 ft msl	Distance from Accident Site:	57 Nautical Miles
Observation Time:	1250 MDT	Direction from Accident Site:	140°
Lowest Cloud Condition:	Clear	Visibility	15 Miles
Lowest Ceiling:	None	Visibility (RVR):	
Wind Speed/Gusts:	15 knots /	Turbulence Type Forecast/Actual:	/
Wind Direction:	150°	Turbulence Severity Forecast/Actual:	/
Altimeter Setting:	30.1 inches Hg	Temperature/Dew Point:	33° C / 16° C
Precipitation and Obscuration:			
Departure Point:	Taos, NM (SKX)	Type of Flight Plan Filed:	None
Destination:	Odessa, TX (ODO)	Type of Clearance:	None
Departure Time:	MDT	Type of Airspace:	Class E

Wreckage and Impact Information

Crew Injuries:	1 Fatal	Aircraft Damage:	Destroyed
Passenger Injuries:	N/A	Aircraft Fire:	None
Ground Injuries:	N/A	Aircraft Explosion:	None
Total Injuries:	1 Fatal	Latitude, Longitude:	33.441389, -103.604444

Administrative Information

Investigator In Charge (IIC):	Thomas M Little	Report Date:	11/25/2003
Additional Participating Persons:	William J Fitzgerald; Federal Aviation Administration; Lubbock, TX		
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 pubinquiry@ntsb.gov , or at 800-877-6799. Dockets released after this date are available at http://dms.nts.gov/pubdms/ .		

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The Independent Safety Board Act, as codified at 49 U.S.C. Section 1154(b), precludes the admission into evidence or use of any part of an NTSB report related to an incident or accident in a civil action for damages resulting from a matter mentioned in the report. A factual report that may be admissible under 49 U.S.C. § 1154(b) is available [here](#).