

Aviation Investigation Factual Report

Location:	OCKLAWAHA, Florida	a	Accident Number:	MIA93FA200
Date & Time:	September 24, 1993,	16:10 Local	Registration:	N5936C
Aircraft:	BEECH	C35	Aircraft Damage:	Destroyed
Defining Event:			Injuries:	1 Fatal
Flight Conducted Under:	Part 91: General avia	tion - Personal		

Factual Information

HISTORY OF FLIGHT

On September 24, 1993, about 1610 eastern daylight time, a Beech C35, N5936C, registered to William E. Heifner, crashed near the Woods and Lakes Airpark, Ocklawaha, Florida, while on a 14 CFR Part 91 personal flight. Visual meteorological conditions prevailed at the time and no flight plan was filed. The airplane was destroyed and the private-rated pilot, the sole occupant, was fatally injured. The flight originated from the Woods and Lakes Airpark, Ocklawaha, Florida, Florida, about 1550.

According to the pilot's wife who was at the airpark at the time of the accident with a portable VHF radio, the purpose of the flight was to test the aircraft's radios. The flight departed, orbited the airpark about five times, then flew to a nearby area which her husband described to her as a possible forced landing area for future reference. Her husband then contacted her and advised of a "problem with the propeller." She thought she heard him say that the propeller hit the ground. She did not witness the accident.

One of the witnesses who lives north of the accident site stated that he observed the airplane flying westbound about treetop level then the airplane banked "steeply" to the left. During this time the engine sounded like it oversped. The airplane had completed 180 degrees of the turn when the nose pitched down. The airplane was descending nose and left wing low and after completing about 180 degrees of the turn, he observed the wings roll level. The nose down attitude did not change before impact with trees then the ground. He also stated that he didn't hear any unusual engine sounds nor did he observe anything separate from the airplane.

Another witness stated that he observed the accident airplane flying eastbound about 15-20 feet above the tops of trees and stated that the engine sounded normal. The airplane was then observed to bank about 45 degrees to the left and proceeded eastbound, after which he lost sight of the airplane. Shortly thereafter, he heard a "chirping sound" which was similar to tires contacting pavement. He stated that there is a paved road near the area that he thought the airplane had landed on. He then observed the airplane climbing to about 300-400 feet and reported that the engine sounded "rough." He lost sight of the airplane and did not witness the crash.

Another witness who is a pilot stated that he observed the airplane flying about 200 feet above ground level (agl) in a climbing left bank with a bank angle between 45 and 60 degrees and a pitch attitude estimated to be 15 to 20 degrees. The airplane climbed to about 450 feet agl when the airplane pitched nose down. He lost sight of the airplane and did not witness the crash. At that time he remarked to himself that the pilot would stall the airplane if he is not careful. He further stated that he doesn't recall if he heard the engine producing power.

PERSONNEL INFORMATION

Information pertaining to the pilot is contained in the NTSB Factual Report-Aviation.

AIRCRAFT INFORMATION

Information pertaining to the airplane is contained in the NTSB Factual Report-Aviation, and the NTSB Form 6120.4, Supplements A and B. The installed propeller was purchased on May 13, 1988, however; review of the aircraft and engine logbooks reveal no entry indicating installation of the propeller on the airplane.

METEOROLOGICAL INFORMATION

Weather information is contained in the NTSB Factual Report-Aviation.

WRECKAGE AND IMPACT INFORMATION

The airplane came to rest upright on a magnetic heading of 030 degrees with several tree branches laying across the wreckage. Examination of the branches reveal signatures consistent with propeller blade contact. The fuselage from the cockpit area to forward of the ruddervators was consumed by the postcrash fire. Additionally, the wing root section of each wing was damaged by the postcrash fire. The right wing with attached flap and aileron exhibited chordwise crushing. The left wing tip was located adjacent to a tree about 48 feet from the wreckage. Examination of signatures of the left wing aileron revealed evidence that it was slightly down at impact. Examination of the airframe revealed that the ruddervators were installed and the control cables were attached to the bellcranks for the ailerons and ruddervators. The control cables and the control voke in the cockpit were damaged by postcrash fire. A small quantity of fuel was located in the left wing. The fuel was not tested. Postcrash fire destroyed the cockpit controls. One of the propeller blades was found about 198 feet from the wreckage and the tip of the other propeller blade was found about 75 feet from the wreckage. The propeller assembly was attached to the engine which was partially attached to the airframe. The engine with attached propeller was removed for further examination.

Examination of the engine assembly revealed that the magnetos which were attached to the engine, were damaged by the postcrash fire, therefore magneto to engine timing and operational testing of the magnetos could not be accomplished. The carburetor was separated from the engine assembly and was damaged by the postcrash fire. The throttle control cable was attached and the throttle was in the idle position. The mixture control at the carburetor and cable were destroyed by the post crash fire. The carburetor heat control cable was attached to the carburetor heat control valve lever assembly. The carburetor heat control was in the cold position. Postcrash fire damage to the carburetor precluded determination of preimpact failure or malfunction. The spark plugs were removed and the propeller was rotated

by hand which revealed crankshaft, camshaft, valve train, and continuity to the accessory section. Differential compression check of each cylinder assembly was not performed. The oil filter was removed, cut open, and examination of the filter element revealed no metal particles. The propeller was removed for further examination.

Examination of the propeller revealed that the propeller blade angle was near the low pitch position. The low pitch constant speed switch tripping arm was contacting the constant speed switch actuator cam. Both safety low pitch stop nuts were attached and secured to each control bolt which was secured to each side of the yoke. The drive gear of the electric motor was contacting the ring gear and was nearly contacting the spring stop. The drive gear teeth of the motor and the ring gear were examined; no teeth were missing or damaged. Examination of the separated propeller blade revealed that the apex of the threads on the butt end of the blade were damaged. The paint near the tip of the propeller blade was slightly eroded in the chordwise direction and the tip was bent toward the noncambered side of the blade. Examination of the fracture surfaces of propeller blade tip revealed signatures consistent with overload failure. The propeller blade was bent toward the non-cambered side and the cambered side of the blade was scratched in the chordwise direction. Examination of the inside of the propeller hub of each adjacent surface to the butt end of the blades revealed cracking and impact signatures. The two propeller blade retention nut locks for each blade were installed in the propeller hub assembly. Nondestructive testing of the propeller hub assembly revealed no cracks. The bronze bushing which is placed over the actuator bolt for the separated blade was not located. The electric motor was operationally tested and found to operate in both directions. The constant speed switch assembly was examined and the low pitch tripping arm would not return when pushed to actuate the operating plunger. Continuity of each micro-switch assembly to the electric motor was verified.

MEDICAL AND PATHOLOGICAL

A postmortem examination of the pilot was conducted by Thomas M. Techman, M.D., Associate Fifth Medical District Medical Examiner, Leesburg, Florida. The cause of death was listed as shock due to multiple traumatic injuries and acute third-degree burns due to airplane crash.

Toxicological testing was performed by the Doctors and Physicians Laboratory located in Leesburg, Florida. The results were positive for carbon monoxide, 2 percent; blood ethanol, .03 GM percent, vitreous humor ethanol level, .05 GM percent; urine ethanol level, .05 GM percent; and bile ethanol level, .04 GM percent. The results were negative for the other drugs tested in the urine and blood including blood cyanide. Testing was also performed by the FAA Civil Aeromedical Institute located in Oklahoma City, Oklahoma. The results were negative for carbon monoxide and cyanide. Acetaminophen was detected in the urine. The results were positive for ethanol detected in the vitreous fluid, 49.000 mg/dl; ethanol detected in blood, 31.000 mg/dl; ethanol detected in the urine, 58.000 mg/dl; and acetaldehyde detected in the blood, 32.000 mg/dl. The results were negative for other drugs tested.

According to the doctor who performed the postmortem examination, the positive ethanol results were not due to putrefaction.

FIRE

The postcrash fire consumed the fuselage from the cockpit to just forward of the ruddervators. Additionally, the wing root sections of both wings were damaged by the postcrash fire.

SURVIVAL ASPECTS

According to a witness, the pilot was alive after the accident and was conscious when he pulled him from the wreckage.

ADDITIONAL INFORMATION

The wreckage was released to Mr. Gene Sheil on December 10, 1993.

Pilot Information

Certificate:	Private	Age:	71,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):	Airplane single-engine; None	Toxicology Performed:	Yes
Medical Certification:	Class 3 Valid Medicalw/ waivers/lim	Last FAA Medical Exam:	July 1, 1992
Occupational Pilot:	UNK	Last Flight Review or Equivalent:	
Flight Time:	4576 hours (Total, all aircraft), 4471 hours (Pilot In Command, all aircraft), 11 hours (Last 90 days, all aircraft), 8 hours (Last 30 days, all aircraft)		

Aircraft and Owner/Operator Information

Aircraft Make:	BEECH	Registration:	N5936C
Model/Series:	C35 C35	Aircraft Category:	Airplane
Year of Manufacture:		Amateur Built:	
Airworthiness Certificate:	Normal	Serial Number:	D-3297
Landing Gear Type:	Retractable - Tricycle	Seats:	4
Date/Type of Last Inspection:	May 12, 1993 Annual	Certified Max Gross Wt.:	2700 lbs
Time Since Last Inspection:	16 Hrs	Engines:	1 Reciprocating
Airframe Total Time:		Engine Manufacturer:	CONTINENTAL
ELT:		Engine Model/Series:	E-185-11
Registered Owner:	HEIFNER, WILLIAM E.	Rated Power:	185 Horsepower
Operator:		Operating Certificate(s) Held:	None
Operator Does Business As:		Operator Designator Code:	

Meteorological Information and Flight Plan

Conditions at Accident Site:	Visual (VMC)	Condition of Light:	Day
Observation Facility, Elevation:	GNV ,152 ft msl	Distance from Accident Site:	40 Nautical Miles
Observation Time:	15:50 Local	Direction from Accident Site:	331°
Lowest Cloud Condition:	Scattered / 3500 ft AGL	Visibility	6 miles
Lowest Ceiling:	None	Visibility (RVR):	
Wind Speed/Gusts:	5 knots / None	Turbulence Type Forecast/Actual:	/
Wind Direction:	90°	Turbulence Severity Forecast/Actual:	/
Altimeter Setting:	30 inches Hg	Temperature/Dew Point:	31°C / 19°C
Precipitation and Obscuration:	N/A - None - Haze		
Departure Point:	(36X)	Type of Flight Plan Filed:	None
Destination:	(36X)	Type of Clearance:	None
Departure Time:	15:50 Local	Type of Airspace:	Class G

Airport Information

Airport:	WOODS AND LAKES AIRPARK 36X	Runway Surface Type:	
Airport Elevation:		Runway Surface Condition:	
Runway Used:	0	IFR Approach:	None
Runway Length/Width:		VFR Approach/Landing:	

Wreckage and Impact Information

Crew Injuries:	1 Fatal	Aircraft Damage:	Destroyed
Passenger Injuries:		Aircraft Fire:	On-ground
Ground Injuries:	N/A	Aircraft Explosion:	On-ground
Total Injuries:	1 Fatal	Latitude, Longitude:	

Administrative Information

Investigator In Charge (IIC):	Monville, Timothy
Additional Participating Persons:	MIKE CONLEY; ORLANDO , FL JOHN T KENT; SEAGOVILLE , TX EDDIE WEBBER; WICHITA , KS
Report Date:	July 20, 1994
Last Revision Date:	
Investigation Class:	<u>Class</u>
Note:	
Investigation Docket:	https://data.ntsb.gov/Docket?ProjectID=37356

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