Aviation Investigation Final Report

Location:	DELAPLANE, Virginia	**Accident Number:**	IAD98FA068
Date & Time:	June 10, 1998, 19:40 Local	**Registration:**	N6033U
Aircraft:	Beech F33A	**Aircraft Damage:**	Destroyed
Defining Event:		**Injuries:**	2 Fatal
Flight Conducted Under:	Part 91: General aviation - Personal		

Analysis

The pilot and pilot rated passenger (PRP) were en route to Frederick (FDK), Maryland, when the airplane collided with mountainous terrain 40 miles from the destination. Several witnesses near the crash site heard an airplane overfly their homes at a low altitude. They reported that the engine was operating as it flew overhead, then they heard the engine stop followed by a 'thud.' According to the witnesses, it was cloudy, and the fog had covered the tops of the 50 foot tall trees. The flight followed the successful completion of a visual flight rules (VFR) cross country flying event. According to the Chairperson of the U.S. Air Race, Inc., the event organizers terminated the daylight and VFR-only event early because weather conditions did not appear to permit a VFR flight to FDK. Several VFR aircraft landed short of FDK and drove the remaining distance. According to Air Traffic Control records the pilot did not file a flight plan. An Air Traffic Controller said, '...Aircraft were canceling their [instrument flight rules] IFR either after landing or short final which caused other inbounds to hold or get delaying vectors.'. AIRMET SIERRA update number 5 issued at 1545, and was current for mountain obscuration and IFR ceilings and visibility's over the accident location. The weather at FDK was IFR and instrument approaches were in use. Examination of the airplane and engine did not disclose any evidence of mechanical malfunction.

Probable Cause and Findings

The National Transportation Safety Board determines the probable cause(s) of this accident to be: The pilot's inadequate in-flight decision which led to VFR flight into instrument meteorological conditions. Also causal was the pilot's failure to maintain adequate terrain clearance resulting in collision with mountainous terrain. Contributing factors were low clouds, fog, mountainous terrain, obscuration, low altitude flying and the pilot's self-induced pressure.

Findings

Occurrence #1: IN FLIGHT ENCOUNTER WITH WEATHER
Phase of Operation: CRUISE

Findings
1. (C) IN-FLIGHT PLANNING/DECISION - INADEQUATE - PILOT IN COMMAND
2. (F) SELF-INDUCED PRESSURE - PILOT IN COMMAND
3. (F) WEATHER CONDITION - LOW CEILING
4. (F) WEATHER CONDITION - OBSCURATION
5. (F) WEATHER CONDITION - FOG
6. (C) VFR FLIGHT INTO IMC - CONTINUED - PILOT IN COMMAND

Occurrence #2: IN FLIGHT COLLISION WITH OBJECT
Phase of Operation: CRUISE

Findings
7. (F) TERRAIN CONDITION - MOUNTAINOUS/HILLY
8. (F) LOW ALTITUDE FLIGHT/MANEUVER - PERFORMED - PILOT IN COMMAND
9. (F) CLEARANCE - INADEQUATE - PILOT IN COMMAND

Factual Information

HISTORY OF FLIGHT

On June 10, 1998, about 1940 eastern daylight time, a Beech F33, N6033U, was destroyed when it collided with trees in mountainous terrain near Delaplane, Virginia. The certificated private pilot, and private pilot rated passenger (PRP), were fatally injured. Instrument meteorological conditions prevailed and no flight plan was filed for the flight conducted under 14 CFR Part 91. The personal flight originated at North Wilkesboro, North Carolina (UKF), at 1800, and was destined for Frederick (FDK), Maryland.

The personal flight followed the successful completion of a VFR cross country flying event. According to the Chairperson of the U.S. Air Race, Inc., the event organizers terminated the daylight and VFR-only event early because weather conditions did not appear to permit a VFR flight from UKF to FDK.

Earlier in the day, the pilot and PRP had flown from Dayton, Ohio to North Carolina. The subject flight to FDK was planned in order to attend a dinner scheduled the next evening. Other pilots who had completed the same event departed VFR, IFR, or rented a car to drive to FDK. All other VFR flights deviated en route and landed at alternate airports or filed an IFR flight plan.

According to the Chairperson of the U.S. Air Race, Inc., in preceding years the pilot and PRP had successfully completed about a dozen similar cross country flying events together or as a part of other teams.

The majority of the flights en route contacted the FAA Approach Control at Baltimore-Washington International Airport for instrument clearances due to instrument meteorological conditions and instrument approach operations at FDK. According to an Air Traffic Controller, "...Aircraft were canceling their IFR either after landing or short final which caused other inbounds to hold or get delaying vectors." There was no record of the pilot of the accident airplane being in contact with any air traffic control facility during the en route flight

Several witnesses near the crash site heard an airplane overfly their homes at a low altitude. They reported that the engine was operating as it flew overhead, then they heard the engine stop followed by a "thud." According to a witnesses, it was cloudy, and the fog had covered the tops of the 50 foot tall trees. The airplane impacted mountainous terrain about 40 miles west of Frederick.

The accident occurred during the hours of daylight approximately 38 degrees, 57 minutes north latitude, and 77 degrees, 56 minutes west longitude.

PERSONNEL INFORMATION

The pilot in the left front seat held a private pilot certificate with a rating for airplane single engine land. He reported over 2,800 hours of total flight experience on his application for a third class medical certificate issued on April 23, 1997. He possessed an instrument rating, and according to the Federal Aviation Administration there was no record of an instrument flight plan being filed.

The PRP in the right front seat held a private pilot certificate with a rating for airplane single engine land. She reported over 1,500 hours of total flight experience on her application for a third class medical certificate issued on April, 28, 1997. She possessed an instrument rating.

AIRCRAFT INFORMATION

The airplane had accumulated over 2,585 hours of flight time according to the annual inspection that was completed on April 20, 1998.

METEOROLOGICAL INFORMATION

The 1951 surface weather observation for Washington Dulles International Airport, was as follows:

Ceiling, broken at 500 feet, overcast at 1,000 feet; visibility, 1 3/4 miles in drizzle and mist; temperature, 61 degrees Fahrenheit (F); dew point, 61 F; winds, variable at 4 knots; and altimeter 30.05 inches Hg.

A meteorological analysis was done. According to the report, a stationary front was the main synoptic feature across Virginia with overrunning moisture producing an extensive area of low ceilings and visibility in light drizzle, fog and mist north of the frontal boundary. The accident location was in this area, to the north of the stationary front.

The National Weather Service had issued an in-flight weather advisory in the form of an AIRMET to warn pilots of an extensive area of low ceilings and visibility's. AIRMET SIERRA update number 5 issued at 1545, for IFR conditions and mountain obscuration valid until 2200 on June 10, 1998. AIRMET covering IFR conditions extended over sections of New York, Pennsylvania, Ohio, Lake Erie, West Virginia, Maryland, Washington D.C., Delaware, Virginia and coastal waters...Occasional ceilings below 1,000 feet AGL and visibility's below 3 miles in precipitation and mist. A copy of the Meteorological Report is attached.

Frederick Airport had installed an automated weather observation system (AWOS-3) which user's can phone in for the latest observation.

WRECKAGE AND IMPACT INFORMATION

The airplane wreckage was examined at the accident site on June 11, 1998. The examination revealed that all major components of the airplane were accounted for at the scene, and that the airplane came to rest inverted, on an approximate magnetic heading of 035 degrees magnetic heading, at a ground elevation of about 1,000 feet above mean sea level (MSL).

Examination of the accident site revealed the right wing tip struck a 100 foot tall tree in mountainous terrain about 1,000 feet MSL. The right wing tip was found at the initial impact point (IIP), Initial tree impact scars started approximately 216 feet from the wreckage, at approximately 1,000 feet MSL. Tree impact scars became progressively lower on the trees in the direction of the wreckage. The tree scars indicated a general direction of 035 degrees. Several pieces of the wing, top of rudder, cabin door frame, left wing tip, bottom half of the vertical stabilizer, instrument panel, and separated engine were found along the tree impact flight path.

An 18 inch diameter tree, 12 feet from the main wreckage, sustained major impact scars 10 feet above the ground, and the airplane collided with terrain about 216 feet from the IIP. Along the wreckage path were branches with cuts similar to propeller strikes.

The propeller, throttle, and mixture control levers exhibited full forward range. Examination of the remainder of the cockpit area produced no useful information due to impact damage.

The engine was separated from the fuselage, and was 27 feet to the right of the main wreckage. The engine separated from the nose section. The oil sump was separated. The number 5 cylinder sustained tree impact damage. During the impact sequence the alternator, starter, both magnetos and the vacuum pump separated. The engine driven fuel pump also separated. A large hole was observed in the top case between the number 5 and 6 cylinders.

The propeller and hub remained attached to the engine. One propeller blade exhibited S bending, another blade exhibited torsional twisting. Despite several search efforts, the third blade was not found. The spinner was crushed around the hub.

The nose strut and wheel were separated from the fuselage at the attaching points and located 12 feet to the right of the main in an area between the engine and the main wreckage. The right main gear was located 12 feet to the left of the main wreckage.

Cable control continuity was not established due to the damage.

The flap actuator and selector indicated the flaps were in the up position. The landing gear actuators as well as the selector indicated the landing gear was retracted.

Examination of the airplane and engine did not disclose any evidence of mechanical malfunction.

MEDICAL AND PATHOLOGICAL INFORMATION

Autopsies were performed on the left front seat pilot, and the pilot rated passenger in the right front seat, on June 15, 1998, by Dr. Norris Royston Jr., of the Northern Virginia Chief Medical Examiners Office, Fairfax, Virginia.

The toxicological testing report from the FAA Toxicology Accident Research Laboratory, Oklahoma City, Oklahoma, revealed negative for drugs and alcohol for the pilot in the left front seat.

The toxicological testing report from the FAA Toxicology Accident Research Laboratory, Oklahoma City, Oklahoma, revealed 15 (mg/dl, mg/hg) Ethanol detected in Muscle Fluid, 6 (mg/dl, mg/hg) Acetaldehyde detected in Muscle Fluid, 13 (mg/dl, mg/hg) Acetaldehyde detected in Kidney Fluid, for the PRP in the right front seat. According to the report, the ethanol found in this case is from postmortem ethanol.

ADDITIONAL INFORMATION

The airplane wreckage was released on June 16, 1998, to a representative of Crittenden Adjustment Company Inc, the owner's insurance company.

Pilot Information

Certificate:	Private	**Age:**	73,Male
Airplane Rating(s):	Single-engine land	**Seat Occupied:**	Left
Other Aircraft Rating(s):	None	**Restraint Used:**	
Instrument Rating(s):	None	**Second Pilot Present:**	No
Instructor Rating(s):	None	**Toxicology Performed:**	Yes
Medical Certification:	Class 3 Valid Medical--w/ waivers/lim	**Last FAA Medical Exam:**	April 23, 1997
Occupational Pilot:	UNK	**Last Flight Review or Equivalent:**	
Flight Time:	2800 hours (Total, all aircraft)		

Aircraft and Owner/Operator Information

Aircraft Make:	Beech	**Registration:**	N6033U
Model/Series:	F33A F33A	**Aircraft Category:**	Airplane
Year of Manufacture:		**Amateur Built:**	
Airworthiness Certificate:	Utility	**Serial Number:**	CE-849
Landing Gear Type:	Retractable - Tricycle	**Seats:**	5
Date/Type of Last Inspection:	April 20, 1998 Annual	**Certified Max Gross Wt.:**	3400 lbs
Time Since Last Inspection:	50 Hrs	**Engines:**	1 Reciprocating
Airframe Total Time:	2600 Hrs	**Engine Manufacturer:**	Continental
ELT:	Installed, not activated	**Engine Model/Series:**	IO-520-BB
Registered Owner:	TEN-HI FLYERS INC	**Rated Power:**	285 Horsepower
Operator:		**Operating Certificate(s) Held:**	None
Operator Does Business As:		**Operator Designator Code:**	

Meteorological Information and Flight Plan

Conditions at Accident Site:	Instrument (IMC)	**Condition of Light:**	Day
Observation Facility, Elevation:	IAD ,290 ft msl	**Distance from Accident Site:**	21 Nautical Miles
Observation Time:	19:51 Local	**Direction from Accident Site:**	100°
Lowest Cloud Condition:	Unknown	**Visibility**	1.75 miles
Lowest Ceiling:	Overcast / 1000 ft AGL	**Visibility (RVR):**	
Wind Speed/Gusts:	4 knots /	**Turbulence Type Forecast/Actual:**	/
Wind Direction:	0°	**Turbulence Severity Forecast/Actual:**	/
Altimeter Setting:	30 inches Hg	**Temperature/Dew Point:**	16°C / 16°C
Precipitation and Obscuration:	N/A - None - Fog		
Departure Point:	NORTH WILKESBOR, NC (UKF)	**Type of Flight Plan Filed:**	None
Destination:	FREDERICK , MD (FDK)	**Type of Clearance:**	None
Departure Time:	18:00 Local	**Type of Airspace:**	Class G

Airport Information

Airport:		**Runway Surface Type:**	
Airport Elevation:		**Runway Surface Condition:**	
Runway Used:	0	**IFR Approach:**	None
Runway Length/Width:		**VFR Approach/Landing:**	None

Wreckage and Impact Information

Crew Injuries:	1 Fatal	**Aircraft Damage:**	Destroyed
Passenger Injuries:	1 Fatal	**Aircraft Fire:**	None
Ground Injuries:	N/A	**Aircraft Explosion:**	None
Total Injuries:	2 Fatal	**Latitude, Longitude:**	38.919189,-77.920356(est)

Administrative Information

Investigator In Charge (IIC):	Drake, Beverley
Additional Participating Persons:	JOHN BROWN; DULLES , VA GEORGE HOLLINGSWORTH; RESTON , VA EDDIE WEBBER; WICHITA , KS DONALD E EICK; WASHINGTON , DC
Original Publish Date:	September 7, 2000
Last Revision Date:	
Investigation Class:	Class
Note:	
Investigation Docket:	https://data.ntsb.gov/Docket?ProjectID=28254