Aviation Investigation Final Report

Location:	KERRVILLE, Texas	**Accident Number:**	FTW98FA192
Date & Time:	April 25, 1998, 23:50 Local	**Registration:**	N60UU
Aircraft:	Beech BE-58	**Aircraft Damage:**	Destroyed
Defining Event:		**Injuries:**	3 Fatal
Flight Conducted Under:	Part 91: General aviation - Personal		

Analysis

The non-instrument rated private pilot lost control of the twin engine airplane while attempting to divert to an airport with a lighted runway in dark night conditions with overcast skies and mist. During a weather briefing 4 hours before departure, the pilot was briefed on weather deteriorating near midnight and that runway 12/30 was closed at the destination airport. Upon arrival at the destination, the pilot made several attempts to activate runway lights for runway 20 before he inquired and was informed by the controller that runway 20 did not have runway lights. The pilot requested a diversion to the closest airport with runway lights and at least a 3,500 foot runway. The pilot was given a heading to an airport 18 miles away. This was the last transmission acknowledged by the pilot. The airplane impacted terrain in a steep nose down attitude. Examination of the airframe and engines did not reveal evidence of any structural or mechanical anomalies.

Probable Cause and Findings

The National Transportation Safety Board determines the probable cause(s) of this accident to be: The non-instrument rated pilot's failure to maintain aircraft control due to spatial disorientation. Factors were the dark night conditions, overcast skies, and the pilot's inadequate preflight planning.

Findings

Occurrence #1: LOSS OF CONTROL - IN FLIGHT
Phase of Operation: MANEUVERING

Findings
1. (F) LIGHT CONDITION - DARK NIGHT
2. (F) WEATHER CONDITION - CLOUDS
3. WEATHER CONDITION - DRIZZLE/MIST
4. (C) AIRCRAFT CONTROL - NOT MAINTAINED - PILOT IN COMMAND
5. SPATIAL DISORIENTATION - PILOT IN COMMAND
6. (F) PREFLIGHT PLANNING/PREPARATION - INADEQUATE - PILOT IN COMMAND
7. AIRPORT FACILITIES,RUNWAY EDGE LIGHTS - NOT INSTALLED
8. AIRPORT FACILITIES,RUNWAY/LANDING AREA CONDITION - CLOSED

Occurrence #2: IN FLIGHT COLLISION WITH TERRAIN/WATER
Phase of Operation: DESCENT - UNCONTROLLED

Factual Information

HISTORY OF FLIGHT:

On April 25, 1998, at 2350 central daylight time, Beech BE-58 twin engine airplane, N60UU, was destroyed upon impact with terrain while maneuvering near Kerrville, Texas. The non-instrument rated private pilot and his 2 passengers were fatally injured. The airplane was owned and operated by the pilot under Title 14 CFR Part 91. Dark night visual meteorological conditions prevailed for the personal flight. A flight plan was not filed; however, the pilot requested and received flight following from the en route air traffic control facilities. The personal cross country flight originated from the Grand Prairie Municipal Airport, Grand Prairie, Texas, at 2225, with the Kerrville Municipal/Louis Schreiner Field Airport, Kerrville, Texas, as the flight's intended destination.

Two witnesses, located 3 miles north of the accident site, observed the lights of the airplane as the airplane traveled southbound toward the Kerrville Airport at 100 to 200 feet agl. The witnesses stated that the engine "did not sound in trouble." Approximately 10 minutes later the lights in their residence flickered 3 times and then went out. Elevation at the residence was 1,825 feet. Ceilings, estimated at 300 to 400 agl, with gusty winds from 10 to 30 mph, drizzle, light rain, and a visibility less than 1/4 mile were reported by these two witnesses.

A witness, located 1/2 mile south of the accident site, heard the airplane fly over his house at 2350. This witness observed the airplane's lights, and then saw the glow of the post impact fire. This witness stated that the "engine had a steady continuous sound." According to this witness, weather was misty with winds 10 to 15 mph, and overcast skies.

Another witness, located south of the accident site, heard the sound of the airplane's engine as the airplane flew by his house, turned, and then flew over the house. This witness observed the airplane's lights shining through his bedroom window. The witness stated that the weather was overcast skies with mist, drizzle, and winds gusting 20 to 25 mph.

The Central Texas Power and Light Company recorded the power outage at 2350. The wreckage of the aircraft was located 7 miles north of the Kerrville Airport.

PERSONAL INFORMATION:

A review of FAA records revealed that the pilot was issued a second class medical certificate on July 9, 1996, without limitations. On the medical application the pilot listed 500 hours of total aircraft flight time with 60 hours in the previous 6 months. The private pilot held airplane single engine land and multiengine land ratings.

AIRCRAFT INFORMATION:

The aircraft (S/N TH-88) was issued the FAA standard airworthiness certificate on August 20, 1970. In 1986, the aircraft was modified by Colemill Enterprises, Inc., "FOXSTAR" per STC-SA1762SO with the installation of 2 Teledyne Continental Model IO-550-C engines and 2 Hartzell HC-C4YF-2E propellers. The right engine, S/N 271694-R, was rebuilt in June 1991 by Teledyne Continental Motors, Mobile, Alabama. The aircraft was registered to the current owner on July 10, 1996. In February 1998, the left engine, S/N 271631-R, was overhauled by America's Aircraft Engines, Inc., Tulsa, Oklahoma. The transponder and pitot static system checks were performed on October 21, 1996. The last annual inspection was performed on October 10, 1997, at a tachometer time of 1,797.4 hours (total aircraft time 7,035.4 hours). A review of the aircraft maintenance records, by the IIC, did not reveal any open discrepancies.

METEOROLOGICAL INFORMATION:

The National Weather Service (NWS) surface observations for the vicinity of the accident site were reporting the winds from 140 to 160 degrees at 9 to 15 knots, visibility 10 statute miles, sky condition 1,700 to 2,100 feet overcast, with temperatures and dewpoints in the sixties. The Area Forecast for Central Texas included marginal VFR ceilings with visibility reduced due to mist.

The NWS facility at San Antonio, Texas, located 45 nautical miles southeast of Kerrville, reported the local weather at 2356 as 1,700 feet overcast skies, 10 statute miles visibility, winds 150 degrees at 12 knots, temperature 68 degrees Fahrenheit, and dewpoint 62 degrees Fahrenheit.

COMMUNICATIONS:

The air traffic control data and transcripts (enclosed) were reviewed and all times were converted to central daylight time unless noted otherwise. The pilot called the Fort Worth Automated Flight Service Station (AFSS) at 1821 and received an abbreviated/outlook weather briefing for a VFR flight from Grand Prairie, Texas, to Kerrville, Texas. The pilot stated that he would be departing Grand Praire about 2230 and the flight time would be 1 hour 15 minutes. The pilot requested the latest forecast. The weather at Kerrville for the time of arrival was forecast to be 1,800 broken with winds from the southeast at 15 knots. The pilot was informed that runway 12/30 at Kerrville "should be closed." The briefer informed the pilot that the new forecast would be issued within the next hour, and the pilot stated that he would call back about 2100 for an update. There was no record of the pilot obtaining another briefing.

At 2225, the pilot contacted DFW Regional Approach Control for VFR flight following to Kerrville at 6,500 feet MSL. The aircraft was assigned a transponder code, 2205, and cleared to climb from 4,500 feet MSL to 6,500 feet MSL for VFR flight following. En route the pilot received flight following from Gray Approach Control and Houston Air Route Traffic Control Center (ARTCC).

The pilot was receiving VFR flight following from the Houston ARTCC in the Kerrville area. At 2318:41 the pilot requested to begin a cruise descent to the destination airport. Radar contact was lost during the airplane's descent from 6,500 feet msl to 4,500 feet msl. The last radar observation at 2326:32 showed the airplane at 4,500 feet MSL at latitude 30 degrees 35.15 North; longitude 98 degrees 48.03 West with a groundspeed of 177 knots and a ground track (199 degrees) paralleling Victor 358.

At 2338:37 the pilot reported that he did not have the runway lights in sight at Kerrville and asked the controller for the status of the runway lights. The pilot reported that he was trying to activate the lights for runway 20. Subsequently, the pilot was informed that runways 12 and 30 were closed and that runways 02 and 20 may not have runway lights.

At 2345:20, the pilot informed the controller that he would need to divert to another airport and requested information on the closest available airport with runway lights with at least a 3,500 foot runway. The pilot was informed that the Fredericksburg Airport had a lighted, hard surfaced, 4,600 foot long runway (14/32). The Fredericksburg Airport identifier (T82) was requested and given to the pilot by the controller. The controller gave the pilot a heading of 024 and a distance of 18 miles to the Fredericksburg Airport, and the pilot acknowledged the controllers transmissions. At 2347:02, the pilot was given a transponder code of 2413; however, this transmission was never acknowledged by the pilot. The controller made numerous attempts to contact the pilot; however, there were no further transmissions from the pilot.

AERODROME INFORMATION:

The listing in the Airport Facility Directory, effective 23 April 1998 through 18 June 1998, for Kerrville Municipal/Schreiner Field was reviewed. Runway 12/20, hard surface, was listed as 4,050 feet long and 60 feet wide with a displaced threshold and trees. Runway 12/30, hard surface, was listed as 5,495 feet long and 100 feet wide with medium intensity runway lights. The airport remarks stated "runway 12/30 CLOSED Mon-Thu 1300-2359Z until May 31, 1998."

According to the San Angelo AFSS, the following NOTAMS were in effect for the Kerrville Airport at the time of the accident: 12/30 closed; ILS approach lights and LOC out of service; runway 2 threshold displaced 500 feet with non standard markings.

WRECKAGE AND IMPACT INFORMATION:

The GPS location of the accident site was 30 degrees 05.53 minutes North; 099 degrees 03.62 minutes West in wooded rocky and hilly terrain at an elevation of 1,940 feet. The main wreckage came to rest on a measured magnetic heading of 340 degrees at a distance of 101 feet from portions of the red navigation lens. Portions of the red navigation lens for the left wing was found at the base of a tree with broken branches. A ground scar, consistent with the length and width of the left wing, extended from the navigation lens fragments to a second

ground scar. This second ground scar had dimensions consistent with those of the left engine nacelle. Numerous components of the airplane were found in all directions from the main wreckage. See the enclosed diagrams for additional details.

High voltage power lines were found down in the area of the accident site. Damage to power lines involved, split poles, broken cross arms, cross arm braces, broken insulators, and 772 feet of destroyed wire. The three phase power line had a minimum ground clearance of 22 feet

All flight control components of the aircraft were accounted for in the wreckage debris. Flight control continuity was established for the flight control cables. There were no complete systems or structures found at the accident site. The aircraft was consumed by a post-impact fire. There were no signs of in-flight sooting, melted splatters, or other heat or soot related in-flight fire evidence. The landing gear and flaps were in the retracted position.

The IO-550-C engines were destroyed. Both vacuum pump drive couplings were intact. No debris was noted in the oil filters or oil pumps. No internal damage was found in the fuel pumps. The throttle body fuel screens were clear and clean. All magnetos were destroyed. See the report from Teledyne Continental for additional details.

All propeller blades were found separated from the hubs. The propeller blades exhibited twisting, bending, and chordwise scoring.

MEDICAL AND PATHOLOGICAL INFORMATION:

The autopsy with autopsy toxicological screening for the pilot was performed by the Justice and Public Safety Division Office of the Medical Examiner of Travis County Forensic Center, Austin, Texas. The toxicological screening performed by the medical examiner detected no alcohol in the muscle.

Aviation toxicological testing was performed by the FAA Civil Aeromedical Institute (CAMI) at Oklahoma City, Oklahoma. According to Dr. Canfield, CAMI, ".019% ethanol was detected in muscle and .025% ethanol was detected in kidney. It cannot be determined whether or not the ethanol present is from ingestion or postmortem production. Pseudoephedrine and ephedrine (decongestants) were detected in kidney and muscle fluid. The FAA does not usually ban the use of decongestants by pilots while flying." See the enclosed toxicology report for additional details.

ADDITIONAL INFORMATION:

The airplane was released to the owner's representative on July 8, 1998.

Pilot Information

Certificate:	Private	**Age:**	52,Male
Airplane Rating(s):	Single-engine land; Multi-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 2 Valid Medical--no waivers/lim.	**Last FAA Medical Exam:**	January 16, 1997
Occupational Pilot:	No	**Last Flight Review or Equivalent:**	
Flight Time:	500 hours (Total, all aircraft)		

Aircraft and Owner/Operator Information

Aircraft Make:	Beech	**Registration:**	N60UU
Model/Series:	BE-58 BE-58	**Aircraft Category:**	Airplane
Year of Manufacture:		**Amateur Built:**	
Airworthiness Certificate:	Normal	**Serial Number:**	TH-88
Landing Gear Type:	Retractable - Tricycle	**Seats:**	6
Date/Type of Last Inspection:	October 30, 1997 Annual	**Certified Max Gross Wt.:**	5400 lbs
Time Since Last Inspection:		**Engines:**	2 Reciprocating
Airframe Total Time:		**Engine Manufacturer:**	Continental
ELT:	Installed	**Engine Model/Series:**	IO-550-C
Registered Owner:	DALE E. HARRINGTON	**Rated Power:**	300 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:**	Night/dark
Observation Facility, Elevation:		**Distance from Accident Site:**	
Observation Time:		**Direction from Accident Site:**	
Lowest Cloud Condition:	Unknown	**Visibility**	10 miles
Lowest Ceiling:	Overcast / 1700 ft AGL	**Visibility (RVR):**	
Wind Speed/Gusts:	10 knots / 30 knots	**Turbulence Type Forecast/Actual:**	/
Wind Direction:	160°	**Turbulence Severity Forecast/Actual:**	/
Altimeter Setting:		**Temperature/Dew Point:**	20°C
Precipitation and Obscuration:	Light - None - Drizzle		
Departure Point:	GRAND PRAIRE (GPM)	**Type of Flight Plan Filed:**	None
Destination:	(ERV)	**Type of Clearance:**	VFR on top
Departure Time:	22:25 Local	**Type of Airspace:**	Class G

Airport Information

Airport:	KERRVILLE MUNICIPAL ERV	**Runway Surface Type:**	Asphalt
Airport Elevation:	1617 ft msl	**Runway Surface Condition:**	
Runway Used:	20	**IFR Approach:**	
Runway Length/Width:	4050 ft / 60 ft	**VFR Approach/Landing:**	

Wreckage and Impact Information

Crew Injuries:	1 Fatal	**Aircraft Damage:**	Destroyed
Passenger Injuries:	2 Fatal	**Aircraft Fire:**	On-ground
Ground Injuries:	N/A	**Aircraft Explosion:**	On-ground
Total Injuries:	3 Fatal	**Latitude, Longitude:**	30.039562,-99.129142(est)

Administrative Information

Investigator In Charge (IIC):	Roach, Joyce
Additional Participating Persons:	GARY WORTHY; SAN ANTONIO , TX
Original Publish Date:	December 1, 1999
Last Revision Date:	
Investigation Class:	Class
Note:	
Investigation Docket:	https://data.ntsb.gov/Docket?ProjectID=20417