Aviation Investigation Final Report

Location:	SUTTER, California	**Accident Number:**	LAX98FA091
Date & Time:	February 21, 1998, 16:40 Local	**Registration:**	N67623
Aircraft:	Beech 95-B55	**Aircraft Damage:**	Destroyed
Defining Event:		**Injuries:**	2 Fatal
Flight Conducted Under:	Part 91: General aviation - Personal		

Analysis

The instrument rated pilot departed Chico and flew in a southerly direction toward the destination. The flight path was reconstructed using recorded radar data and ground witness observations. The pilot maintained a cruise altitude between 700 and 900 feet msl and initially was cruising below the clouds. The ceiling lowered, and the pilot reversed course. The pilot entered the base of the clouds, lost visual reference to the ground, and cruised into the upsloping mountainous terrain of Sutter Buttes, impacting about 780 feet msl. Prior to the flight the pilot, who had been visiting his daughter, indicated to her that if the weather became inclement he would reverse course and return to Chico. At 1101, the pilot received a weather briefing, which indicated that instrument meteorological weather conditions (IMC) including icing, existed along the planned route of flight home, and the pilot delayed his departure. The pilot received additional briefings at 1315 and 1518, and both indicated IMC continued to exist. The pilot's logbook indicated he last flew under IMC 9 months previously, and he had not maintained instrument flying currency. No evidence of a preimpact mechanical malfunction was found during the examination of the airplane.

Probable Cause and Findings

The National Transportation Safety Board determines the probable cause(s) of this accident to be: The pilot's in-flight decision(s) to attempt VFR flight in instrument meteorological conditions at an altitude which did not provide for adequate terrain clearance requirements. A factor that contributed to the accident was the pilot's decision to disregard the preflight weather briefing he obtained, which advised against visual flight along his intended route.

Findings

Occurrence #1: IN FLIGHT COLLISION WITH TERRAIN/WATER
Phase of Operation: CRUISE - NORMAL

Findings
1. TERRAIN CONDITION - MOUNTAINOUS/HILLY
2. TERRAIN CONDITION - RISING
3. WEATHER CONDITION - LOW CEILING
4. (F) PREFLIGHT BRIEFING SERVICE - DISREGARDED - PILOT IN COMMAND
5. (C) VFR FLIGHT INTO IMC - ATTEMPTED - PILOT IN COMMAND
6. (C) ALTITUDE/CLEARANCE - NOT MAINTAINED - PILOT IN COMMAND

Factual Information

HISTORY OF FLIGHT

On February 21, 1998, at 1640 hours Pacific standard time, a Beech 95-B55, N67623, owned and operated by the pilot, collided with rising terrain about 3 nautical miles (nmi) northwest of Sutter, California. Instrument meteorological conditions prevailed in the vicinity of the accident site, and no flight plan was filed. The airplane was destroyed by impact forces and by a postimpact ground fire. The instrument rated commercial pilot and the passenger was fatally injured. The personal flight, operated under 14 CFR Part 91, originated from the Chico Municipal Airport, Chico, California, at 1620.

Prior to the pilot's departure the pilot spoke with his daughter at the Chico Airport. According to the daughter, her father indicated that he and his wife planned to depart from Chico and fly southbound toward their home near the Taft-Kern County Airport. However, should the en route weather become inclement, the pilot planned to reverse course and return to Chico.

On duty Federal Aviation Administration (FAA) controllers at the Chico Airport Air Traffic Control Tower reported that N67623 departed using runway 13. After proceeding straight out for a few minutes, the airplane turned southbound and they had no further visual contact with it.

Near the time of the accident four witnesses in the vicinity of Sutter reported observing and/or hearing a low flying airplane. In summary, none of the witnesses reported hearing any engine backfiring or sputtering sounds. The witnesses generally reported that the airplane reversed its course while flying in and out of the low elevation clouds. Two of the witnesses indicated that they lost sight of the airplane after it entered the clouds while heading in a northerly direction toward the Sutter Buttes. One of the witnesses reported hearing the sound of a crash.

PERSONNEL INFORMATION

The pilot's partially burned personal flight record logbook was found in the wreckage. The logbook indicated that the pilot's total instrument flying experience was about 135 hours. Of these flight hours, no determination was made regarding the number of hours flown in actual versus simulated weather conditions.

Logbook pages showing the pilot's flying activities during the preceding 12 months were located at the accident site and were observed intact. The entries indicated that on February 13, 1997, the pilot passed a flight check in the accident airplane and obtained the following additional ratings to his existing commercial pilot certificate and airplane single engine

instrument rating: multiengine land airplane and multiengine instruments.

Regarding the pilot's instrument flying currency, in May 1997 the pilot logged 5 hours of instrument flight time. No evidence of more recent instrument flying experience was noted.

The pilot's logbook was additionally reviewed to determine the pilot's familiarity with the route of flight between Taft and Chico. The pilot had performed this round trip flight on about 10 occasions during the preceding 12 month period.

During the afternoon of February 20, 1998, the pilot flew his airplane with the owner/operator of Megahertz Avionics in Bakersfield, California. The owner of Megahertz reported to the National Transportation Safety Board that he flew with the accident pilot between 1.5 and 2.0 hours under visual meteorological conditions. The purpose of the flight was, in part, to familiarize the pilot with the avionics equipment which had been installed 3 days earlier. During the flight several instrument approaches and missed approaches were performed using the recently installed global positioning satellite (GPS) receiver. In addition, several autopilot-coupled instrument landing system (ILS) approaches were performed.

According to the owner of Megahertz, at the conclusion of the flight he advised the pilot not to fly on instruments using the GPS receiver until he had become more familiar with its operation. The owner additionally reported that during his conversations with the pilot, the pilot had indicated to him that his instrument flying skills were not current.

AIRCRAFT INFORMATION

The owner of Megahertz reported that he is an instrument rated commercial pilot, and during the flight with the accident pilot he observed the airplane's various systems and instruments. The entire flight proceeded normally, and no airplane systems or instruments were observed defective or performed abnormally.

The FAA coordinator reported that he reviewed the airplane's maintenance records. The coordinator reported finding no evidence of outstanding airworthiness issues. He also indicated that the records appeared complete with no anomalies noted.

METEOROLOGICAL INFORMATION

The pilot requested and received three telephone weather briefings from the FAA's Rancho Muriata Flight Service Station during the 6-hour period prior to departure. The briefings were provided at 1101, 1315, and 1518. The Safety Board reviewed the FSS's audiotape of the briefings. In pertinent part, during the first briefing the pilot indicated to the briefer that he could fly under instrument flight rules (IFR) and he planned to fly along a direct route between Chico and Bakersfield using GPS. The briefer advised the pilot that the freezing level was between 6,000 and 9,000 feet. The pilot reported that he would delay his departure.

During the subsequent briefings the pilot indicated that he planned to fly beneath the clouds at 2,000 feet mean sea level (msl). The briefer advised the pilot that areas of occasional moderate turbulence and instrument meteorological weather conditions (IMC) existed along his proposed route of flight. The IMC consisted of heavy rain, multiple cloud layers, ceilings occasionally less than 1,000 feet, and visibility less than 3 miles. The briefer stated that VFR flight did not look too good.

The two closest aviation weather reporting facilities to the accident site are located 36 nmi miles north-northwest (338 degrees magnetic) at the Chico Airport (elevation 238 feet msl), and 16 miles east (088 degrees magnetic) at the Beal Air Force Base (elevation 113 feet msl).

Three minutes after the pilot's departure, at 1623, Chico reported its surface wind was from 130 degrees at 20 knots with gusts to 29 knots, 20 miles visibility, light rain showers, broken clouds at 800 feet above ground level (agl), and overcast clouds at 9,000 feet agl. The altimeter setting was 29.82 inHg.

Nine minutes after the crash, at 1649, Chico reported its surface wind was from 120 degrees at 18 knots with gusts to 30 knots, 15 miles visibility, broken clouds at 800 feet agl, and overcast clouds at 9,000 feet agl.

Fifteen minutes after the crash, at 1655, Beal Air Force Base reported its surface wind was from 160 degrees at 20 knots, 6 miles visibility, mist, few clouds at 1,000 feet agl, and broken clouds at 1,500, 3,000, and 9,000 feet agl. The altimeter setting was 29.85 inches of mercury.

Three witnesses located in the vicinity of Sutter reported that near the time of the accident the Sutter Buttes were either covered or obscured by clouds. One of the witnesses reported that the hilltop near his location, elevation 607 feet msl, was not visible. Also, a thick layer of dark appearing clouds was in the area, and there were also "open spots here and there."

AIDS TO NAVIGATION

According to the FAA's daily records of facility operation, all electronic aids to navigation in the vicinity of the accident site and pertinent to the pilot's route of flight were functional.

COMMUNICATION

The FAA reported that its last communication with the accident airplane occurred during its departure from the Chico Airport, and the communication was routine. Beal Air Force Base personnel reported they never heard any communication from the airplane pilot.

WRECKAGE AND IMPACT INFORMATION

From an examination of the accident site, airplane wreckage, and witness statements, the airplane was found to have collided with the estimated 15-degree upsloping, rocky and hilly

terrain of Sutter Buttes' south slope. The accident site is located on private property at GPS coordinates of 39 degrees 11.979 minutes north latitude, by 121 degrees 46.140 minutes west longitude.

The elevation at the initial point of impact (IPI) is estimated at 780 feet msl. The main wreckage was found about 900 feet msl, at coordinates 39 degrees 12.022 minutes north latitude, by 121 degrees 46.142 minutes west longitude. This location was about 25 feet below the summit of the hill. Additional wreckage was found scattered further northward over the top of the hill and on the downslope side. The furthest portion of identifiable material from the airplane was located an estimated 50 feet north of coordinates 39 degrees 12.092 minutes north latitude, by 121 degrees 46.152 minutes west longitude.

The distance between the IPI and the main wreckage was about 240 feet. The central axis of wreckage distribution between the IPI and the main wreckage was approximately 350 degrees magnetic. The overall distance and bearing between the IPI and the northern most debris was about 1/8-mile and 339 degrees.

The IPI was marked by the presence of two, nearly symmetrically shaped, impact craters which resembled the outline of the airplane's engines. Engine oil-like material was noted in both of the craters. The elevation of the crater on the left side of the main impact area was found about 5 degrees lower than the crater on the right side.

The hub of the right engine's propeller assembly was found imbedded in the ground in the eastern most crater. Red and green colored navigation light lens fragments were observed on the ground to the left and right of the craters, respectively.

The impact-damaged propeller assemblies, fragments of windscreen, seat track, the pitot tube, and portions of airframe structure were found uphill from the IPI. One propeller blade from each assembly was found with its tip fractured. All blades were observed curled with their leading edges gouged. The blades were found scored over their cambered surfaces in a chordwise direction and were torsionally deformed.

With the exception of the rudder and elevator assemblies, which were found attached to the intact aft portion of the empennage, the entire airplane was observed fragmented. A postimpact fire consumed the majority of the wings and all of the cockpit.

The bottom surface of the aft empennage was examined and was found intact. No evidence of deformation (crush) in an upward direction was noted. The latches from both the nose baggage door and the cabin entry door were found in the locked position.

The continuity of the flight control system was established between the aft fuselage and the flight control surfaces in the tail. All flight instruments, communication transceivers, and navigation equipment was found either crushed, fragmented, or destroyed by fire.

MEDICAL AND PATHOLOGICAL INFORMATION

An autopsy was performed by the Sutter County Coroner's Office. Toxicology tests were performed by the FAA. The FAA reported finding no evidence of ethanol or drugs.

TESTS AND RESEARCH

Engines.

The engines were located next to the main wreckage. The engines were externally examined and then partially disassembled and further examined. Numerous areas of the engines' cases, accessories, and internal components were observed impact damaged. The left engine was also fire damaged.

One magneto was found from each engine, and neither produced spark upon rotation of the intact drive gear mechanism. Several spark plugs were removed from each engine. The spark plugs appeared clean, and no atypical electrode wear patterns were noted as referenced by their manufacturer's guidelines.

Neither of the crankshafts could be rotated. No evidence of preimpact failure of the valve or gear train components was observed with either engine.

Several drops of fuel were observed upon disconnecting the main fuel line to the right engine. Fuel was also observed inside the engine's flow divider. The fuel manifolds and the fuel screens in the gascolator bowls were found clear in both engines.

Score marks were noted in the surface of the partially exposed number 4 piston from the right engine. The marks were oriented along the piston's longitudinal axis, in a direction consistent with the pistons up and down motion. No metal particles were observed in either of the engine's oil filter screens.

A section of an exhaust pipe, from one of the engines, was located in a grassy area on the left side of the wreckage distribution path. Grass beneath the exhaust pipe was observed burned. (See the attached report from the Continental Engine participant for additional information.)

Transponder and Radar Track.

The airplane's altitude encoding (Mode C) transponder was found in the wreckage and was examined. Its impact-damaged faceplate was partially removed, and the transponder switch was found in the "ON" position.

A search of recorded radar data for air traffic was performed, which had been flying between 1620 and 1645 on a southerly course between Chico and the accident site. The search profile was limited to include only aircraft exhibiting a Mode C altitude readout, reversing course

south of the Sutter Buttes, and then disappearing off radar in the vicinity of the Sutter Buttes.

During this time period only one aircraft radar track was located having a flight profile consistent with the search parameters. The track for the aircraft appeared to match the course that the witnesses had described.

In summary, a review of the radar track for the aircraft indicated that its course was southerly until approaching Sutter, and the aircraft's altitude varied between 700 and 900 feet msl. Between approximately 1638 and 1639, the aircraft performed a clockwise turn and reversed course. Between 1639 and the time of the last radar hit at 1639:44, the aircraft proceeded along a northerly course and maintained 800 feet msl. The radar track for the northbound aircraft disappeared within approximately 1/2-mile from the crash site, about 36 nmi south of Chico.

Flight Rules.

The FAA has specified the minimum safe altitudes for which an airplane pilot is permitted to fly. The rules pertinent to flying over any congested area of a city, town, or settlement require the pilot to fly at an altitude of 1,000 feet above the highest obstacle within a horizontal radius of 2,000 feet of the aircraft.

The FAA has also specified the distance at which an airplane pilot, operating in Class G (uncontrolled) airspace, is permitted to fly in proximity to clouds. The visual flight rules pertinent to the daytime accident flight which the pilot was operating required him, at all times, to fly clear of clouds.

ADDITIONAL INFORMATION

All recovered airplane wreckage was verbally released to the owner's assigned insurance adjuster on February 26, 1998.

Pilot Information

Certificate:	Commercial	**Age:**	47,Male
Airplane Rating(s):	Single-engine land; Multi-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 Valid Medical--w/ waivers/lim	**Last FAA Medical Exam:**	January 21, 1997
Occupational Pilot:	No	**Last Flight Review or Equivalent:**	
Flight Time:	914 hours (Total, all aircraft), 148 hours (Total, this make and model), 19 hours (Last 90 days, all aircraft)		

Aircraft and Owner/Operator Information

Aircraft Make:	Beech	**Registration:**	N67623
Model/Series:	95-B55 95-B55	**Aircraft Category:**	Airplane
Year of Manufacture:		**Amateur Built:**	
Airworthiness Certificate:	Normal	**Serial Number:**	TC-876
Landing Gear Type:	Retractable - Tricycle	**Seats:**	6
Date/Type of Last Inspection:	November 16, 1997 Annual	**Certified Max Gross Wt.:**	5000 lbs
Time Since Last Inspection:	19 Hrs	**Engines:**	2 Reciprocating
Airframe Total Time:	8443 Hrs	**Engine Manufacturer:**	Continental
ELT:	Installed, not activated	**Engine Model/Series:**	IO-470-L
Registered Owner:	STEVEN J. AND LAURA B. THOMAS	**Rated Power:**	260 Horsepower
Operator:	STEVEN J. THOMAS	**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:	CIC ,238 ft msl	**Distance from Accident Site:**	36 Nautical Miles
Observation Time:	16:49 Local	**Direction from Accident Site:**	338°
Lowest Cloud Condition:	Unknown	**Visibility**	15 miles
Lowest Ceiling:	Broken / 800 ft AGL	**Visibility (RVR):**	
Wind Speed/Gusts:	18 knots / 30 knots	**Turbulence Type Forecast/Actual:**	/
Wind Direction:	120°	**Turbulence Severity Forecast/Actual:**	/
Altimeter Setting:	29 inches Hg	**Temperature/Dew Point:**	
Precipitation and Obscuration:	No Obscuration; No Precipitation		
Departure Point:	CHICO , CA (CIC)	**Type of Flight Plan Filed:**	None
Destination:	TAFT , CA (L17)	**Type of Clearance:**	None
Departure Time:	16:20 Local	**Type of Airspace:**	Class G

Airport Information

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

Wreckage and Impact Information

Crew Injuries:	1 Fatal	**Aircraft Damage:**	Destroyed
Passenger Injuries:	1 Fatal	**Aircraft Fire:**	On-ground
Ground Injuries:	N/A	**Aircraft Explosion:**	None
Total Injuries:	2 Fatal	**Latitude, Longitude:**	39.0499,-121.609001(est)

Administrative Information

Investigator In Charge (IIC):	Pollack, Wayne
Additional Participating Persons:	PETER WILHELMSON; SACRAMENTO , CA JOHN WARD; WICHITA , KS R.S. SCOTT BOYLE; ARVADA , CO
Original Publish Date:	February 16, 2001
Last Revision Date:	
Investigation Class:	Class
Note:	
Investigation Docket:	https://data.ntsb.gov/Docket?ProjectID=29938