Aviation Investigation Final Report

Location:	Carlsbad, California	**Accident Number:**	LAX08FA300
Date & Time:	September 28, 2008, 07:15 Local	**Registration:**	N82TB
Aircraft:	Beech A36	**Aircraft Damage:**	Destroyed
Defining Event:	Loss of control in flight	**Injuries:**	1 Fatal
Flight Conducted Under:	Part 91: General aviation - Personal		

Analysis

The airplane was on an Instrument Landing System (ILS) approach to Runway 24. The reported weather was 100-foot ceiling and 1/4-mile visibility in fog at the airport. The published weather minimums for the ILS 24 approach are 200-foot ceiling and 3/4-mile visibility. The tower controller relayed to the pilot that the runway visual range was 1,600 feet (1/4 mile), winds were 280 degrees at 5 knots, and the flight was cleared to land on Runway 24. About 2 minutes later the tower controller issued the pilot a low altitude alert, followed by a notification that it appeared that the pilot was south of course. About 2 minutes later, the pilot transmitted that he was going to ‘abort’ the approach. The pilot's last transmission 1 minute later stated "I’m in trouble." Despite numerous attempts, no further communications with the pilot were established. Radar data indicated that, 2 miles from the approach end of Runway 24, the airplane crossed over the final approach course at 800 feet msl (mean sea level) heading south. The track started a tight left-hand turn with altitude readings that fluctuated between 600 and 1,100 feet msl. The last radar return depicted the airplane at 900 feet msl and at a ground speed of 56 knots. The airplane wreckage was confined to the initial impact point, located on an approximate 40-degree sloping hillside, 1.3 miles southeast of the approach end of Runway 24, in the same vicinity as the last radar return. Post accident inspection of the airframe and engine found no evidence of a mechanical failure or malfunction. The pilot had received his instrument rating 2 months prior to the accident, and had accumulated approximately 41 hours of actual instrument time. Approximately 11.1 hours of dual instruction had been accumulated in the accident airplane. The pilot received no instrument flight training in the accident airplane.

Probable Cause and Findings

The National Transportation Safety Board determines the probable cause(s) of this accident to be:

The pilot's failure to maintain control during the instrument approach and attempted go-around.

Findings

Aircraft	(general) - Not attained/maintained
Personnel issues	Aircraft control - Pilot
Environmental issues	Low ceiling - Effect on operation
Environmental issues	Fog - Effect on operation

Factual Information

History of Flight

Approach-IFR final approach	Loss of control in flight (Defining event)
Uncontrolled descent	Collision with terr/obj (non-CFIT)

HISTORY OF FLIGHT

On September 28, 2008, about 0715, a Beechcraft A36, N82TB, impacted terrain while on an instrument approach to McClellan-Palomar Airport, Carlsbad, California. The instrument rated private pilot operated the airplane under the provisions of Title 14 Code of Federal Regulations, Part 91. The pilot was killed and the airplane was destroyed. Instrument meteorological condition prevailed and an IFR (instrument flight rules) flight plan had been filed. The flight originated at Lake Havasu City Airport, Lake Havasu, Arizona.

The pilot filed an IFR flight plan at 0351 using the DUAT system. DUAT is the Federal Aviation Administration (FAA) Direct User Access Terminal, which allows pilots to access airport information, flight conditions, and file flight plans using a computer terminal. The flight plan stated the intended departure was from Lake Havasu at 0550, and the destination was McClellan-Palomar Airport. There was no alternate airport designated.

Air traffic control communications and radar data from the Palomar Control Tower and Southern California TRACON depicted the accident airplane on the ILS (instrument landing system) approach for runway 24 at Palomar. At 0711:14, the tower relayed to the pilot that the runway visual range (RVR) was 1,600 feet (1/4 mile), winds were from 280 degrees at 5 knots, and was cleared to land on runway 24. At 0713:52, the tower controller issued the pilot a low altitude alert, and at 0714:58, notified the pilot that he appeared to be south of course. At 0715:16 the pilot transmitted that he was going to 'abort' the approach. At 0716:06, the pilot transmitted 'I'm in trouble.' Despite numerous attempts, no further communications with the pilot were established after his last transmission.

The radar data depicted that at 0714:41, 2 miles from the approach end of runway 24, the airplane crossed over the final approach course at 800 feet msl (mean sea level) headed south. At 0715:09, the track started a tight left-hand turn with altitude readings that fluctuated between 600 and 1,100 feet. At 0716:04, the last radar return depicted the airplane at 900 feet msl, and a ground speed of 56 knots.

The airplane wreckage was located on a hillside 1.3 miles southeast of the approach end of runway 24, in the same vicinity as the last radar return.

PERSONNEL INFORMATION

The pilot, age 41, held a private pilot certificate with ratings for airplane single-engine land, and instrument airplane, issued on June 7, 2008. He held a third-class airman medical certificate issued on November 9, 2005, with no limitations or restrictions.

The pilot's flight logbook was not recovered during the course of the investigation. The company that insured the airplane provided copies of recent pilot records that documented the pilot's flight time. As of July 28, 2008, the pilot reported to the insurance company that he had a total of 899.5 hours in all aircraft. Approximately 41.0 hours had been accumulated as actual instrument time, with 6.6 hours as simulated instrument, and 11.1 hours on complex airplane. The 11.1 hours of complex time was all flown in the accident airplane between July 24 and July 29. The pilot had not logged any instrument approaches or instrument time during that period.

The certified flight instructor (CFI) that performed the pilot's complex aircraft training in the accident airplane stated that she did not give him any instrument flight instruction during his transition to the A36 Bonanza, or at any other time.

The pilot's primary flight instructor stated that he never gave the pilot any instruction in the A36. The CFI did say that the pilot showed him a piece of computer equipment called VistaNav that displayed navigation, approach information, and 3D course view. VistaNav is now marketed as the AV8OR electronic flight bag (EFG) by Bendix-King. He said the pilot was very proficient at using this piece of equipment. The CFI also related that the pilot had recently told him that he had flown into an airport when the weather there was at approach minimums. He did not specify the airport where he performed this approach.

AIRCRAFT INFORMATION

The low wing, retractable landing gear airplane, serial number (S/N) E-1216, was manufactured in 1978. Originally equipped with 6 seats, only 4 seats were identified in the wreckage. It was powered by a Teledyne Continental IO-550-B(4), 300-horsepower engine, and equipped with a three bladed constant speed propeller.

Review of copies of maintenance logbook records indicated the most recent annual inspection was completed on both the airframe and engine on July 12, 2008, at the total engine time of 485.5 hours and total airframe time of 3,836.5 hours.

The weight and balance sheet in the pilot's operating handbook was dated April 20, 2007, and listed the airplane empty weight as 2,459.9 pounds.

Federal Aviation Administration (FAA) records show that the airplane was registered to the current owner on August 21, 2008.

The Beechcraft A36 Pilot Operating Handbook (POH) power idle stall speed chart indicated

that at an aircraft weight of 3,000 pounds and flaps down, the stall speed is 54 knots indicated airspeed. Using the same conditions, the stall speed in a 30-degree angle of bank is shown as 58 knots indicated airspeed.

METEOROLICAL INFORMATION

At 0353, the approximate time the pilot filed his IFR flight plan, the McClellan-Palomar Airport Automated Surface Observation System (ASOS) recorded that the visibility was 1/2 mile in fog; vertical visibility was 100 feet; winds were calm; the temperature was 17 degrees C; and the dew point was 16 degrees C.

At 0653, the McClellan-Palomar ASOS recorded that the visibility was 1/4 mile in fog; vertical visibility was 100 feet; and winds were from 350 degrees at 3 knots.

At 0711, when the pilot was on the ILS RWY 24 approach, the McClellan tower controller transmitted to the pilot that the runway visual range (rvr) was 1,600 (feet); winds were from 280 degrees at 5 knots; and was cleared to land on runway 24. The published weather minimums for the ILS RWY 24 approach are 200-foot ceiling and 3/4-mile visibility.

At 0753, the McClellan-Palomar Airport ASOS recorded that the visibility was 1/4 mile in fog, and the ceiling was 100 feet.

WRECKAGE AND IMPACT

The wreckage was located on a hillside at the fork of Bressi Ranch Way and El Fuerte Street in Carlsbad, California. The hillside was sloped approximately 40 degrees and populated with dry brush and grass. The entire airplane was located at the initial impact point and consumed by a post impact fire.

All flight control surfaces and balance weights were accounted for. Flight control cables were traced from all the control surface bell cranks to the cockpit. The cockpit had been exposed to extreme thermal energy and control cable connections to the cockpit control yoke and rudder pedals could not be verified.

The propeller had separated from the engine crankshaft at the propeller flange and was located in the fuselage/cockpit area. Two of the three propeller blades exhibited S-bending and forward tip curling.

The engine was located next to the propeller. All 6 cylinders were on the engine block, both magnetos were present, and the oil pan appeared melted open.

A full wreckage layout and examination was conducted on November 11, 2008, by the Safety Board investigator-in-charge, assisted by technical representatives from Teledyne Continental Motors and Hawker Beechcraft.

Flight control and trim cables were traced from the cockpit to all the control surfaces. Numerous control cables in the vicinity of the cockpit exhibited clean separations, consistent with airframe deformation entrapment, and pinching.

The left flap actuator was extended 5 inches, consistent with a 20-degree flap position. The elevator trim actuator was extended 1 7/16 inches, consistent with 5 degrees tab down trim.

The landing gear was determined to have been in the retracted position based on actuator tube deformation at the bell crank connection.

Compressed air was passed through the fuel selector valve. The valve position was determined to be on the right fuel tank.

The cockpit attitude gyro was disassembled; two 0.27-inch witness/rub marks were identified on the interior of the gyro case.

The engine driven vacuum pump drive coupling was deformed and melted. The vacuum pump was disassembled and the rotor drum was found fractured into four sections, all rotor vanes were loose, in their slots, and measured approximately 0.6 inches in width.

The engine driven fuel pump was removed, the drive coupling was intact, and the pump was rotated by hand.

The left magneto was not mounted to its mounting pad. The right magneto was removed from its mounting pad. The magnetos exhibited exposure to thermal energy and were rotated by hand, but neither produced spark at any posts.

All spark plugs were removed, and each exhibited a light gray color consistent with normal operation per the Champion Aviation Check-A-Plug Chart. All gaps were similar, and exhibited no mechanical damage.

The forward engine crankshaft bearing was deformed, which prevented the engine from being rotated. All cylinders were borescoped; they exhibited brown-gray deposits with no evidence of mechanical damage to the cylinders, pistons, or valves.

MEDICAL AND PATHOLOICAL INFORMATION

An autopsy was performed on the pilot on Sept 29, 2008, by the San Diego County Medical Examiner. The autopsy findings include 'multiple blunt force injuries,' and the cause of death was a result of those injuries.

Forensic toxicology was performed on specimens from the pilot by the FAA Forensic Toxicology Research Team, Oklahoma City, Oklahoma. The toxicology report stated that

ethanol was detected in blood, urine, brain, and muscle. N-Propanol was detected in blood, urine, and muscle. No other legal or illegal drugs were detected.

ADDITIONAL INFORMATION

Spatial Disorientation

The Instrument Flying Handbook (FAA-H-083-15A) defines spatial disorientation as "the lack of orientation with regard to position in space and to other objects."

“Two factors that cause altitude to deviate are turbulence and momentary distractions. When a deviation occurs, a change in the pitch needs to be made on the attitude indicator. Small deviations require small corrections while large deviations require larger corrections. Pilots should avoid making large corrections that result in rapid attitude changes, for this may lead to spatial disorientation. Smooth, timely corrections should be made to bring the aircraft back to the desired attitude.”

Pilot Information

Certificate:	Private	**Age:**	41,Male
Airplane Rating(s):	Single-engine land	**Seat Occupied:**	Right
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 3	**Last FAA Medical Exam:**	November 1, 2005
Occupational Pilot:	No	**Last Flight Review or Equivalent:**	
Flight Time:	899 hours (Total, all aircraft), 11 hours (Total, this make and model)		

Aircraft and Owner/Operator Information

Aircraft Make:	Beech	**Registration:**	N82TB
Model/Series:	A36	**Aircraft Category:**	Airplane
Year of Manufacture:		**Amateur Built:**	
Airworthiness Certificate:	Utility	**Serial Number:**	E-1216
Landing Gear Type:	Retractable - Tricycle	**Seats:**	4
Date/Type of Last Inspection:	July 12, 2008 Annual	**Certified Max Gross Wt.:**	3600 lbs
Time Since Last Inspection:		**Engines:**	1 Reciprocating
Airframe Total Time:	3836 Hrs as of last inspection	**Engine Manufacturer:**	Teledyne Continental
ELT:	Installed, not activated	**Engine Model/Series:**	IO-550-B(4)
Registered Owner:	On file	**Rated Power:**	300 Horsepower
Operator:	On file	**Operating Certificate(s) Held:**	None

Meteorological Information and Flight Plan

Conditions at Accident Site:	Instrument (IMC)	**Condition of Light:**	Day
Observation Facility, Elevation:	KCRQ,331 ft msl	**Distance from Accident Site:**	1 Nautical Miles
Observation Time:	07:53 Local	**Direction from Accident Site:**	60°
Lowest Cloud Condition:		**Visibility**	0 miles
Lowest Ceiling:	Overcast / 100 ft AGL	**Visibility (RVR):**	1600 ft
Wind Speed/Gusts:	5 knots /	**Turbulence Type Forecast/Actual:**	/
Wind Direction:	280°	**Turbulence Severity Forecast/Actual:**	/
Altimeter Setting:	29.93 inches Hg	**Temperature/Dew Point:**	17°C / 16°C
Precipitation and Obscuration:	N/A - None - Fog		
Departure Point:	Lake Havasu Cit, AZ (KHII)	**Type of Flight Plan Filed:**	IFR
Destination:	Carlsbad, CA (KCRQ)	**Type of Clearance:**	IFR
Departure Time:	06:13 Local	**Type of Airspace:**	Class D

Airport Information

Airport:	McClellan-Palomar Airport KCRQ	**Runway Surface Type:**	
Airport Elevation:	331 ft msl	**Runway Surface Condition:**	Dry
Runway Used:	24	**IFR Approach:**	ILS
Runway Length/Width:	4897 ft / 150 ft	**VFR Approach/Landing:**	None

Wreckage and Impact Information

Crew Injuries:	1 Fatal	**Aircraft Damage:**	Destroyed
Passenger Injuries:		**Aircraft Fire:**	On-ground
Ground Injuries:	N/A	**Aircraft Explosion:**	None
Total Injuries:	1 Fatal	**Latitude, Longitude:**	33.125831,-117.250274

Administrative Information

Investigator In Charge (IIC):	McKenny, Van
Additional Participating Persons:	Steve Vargo; Federal Aviation Administration; San Diego, CA Eric Thomas; Hawker-Beechcraft; Wichita, KS Andrew Swick; Teledyne Coninental Motors; Mobile, AL
Original Publish Date:	December 15, 2009
Last Revision Date:	
Investigation Class:	Class
Note:	The NTSB traveled to the scene of this accident.
Investigation Docket:	https://data.ntsb.gov/Docket?ProjectID=69019