Aviation Investigation Final Report

Location:	CONROE, Texas	**Accident Number:**	FTW99FA021
Date & Time:	November 7, 1998, 19:00 Local	**Registration:**	N4726R
Aircraft:	Piper PA-28R-200	**Aircraft Damage:**	Substantial
Defining Event:		**Injuries:**	3 Fatal
Flight Conducted Under:	Part 91: General aviation - Personal		

Analysis

During a dark night forced landing, following a loss of engine power due to fuel exhaustion, the airplane collided with terrain. On the flight plan for the flight from Searcy, AR, to Waco (ACT), TX, the airline transport pilot estimated 3 hrs 10 min flight time and 4 hrs fuel available. At 2 hrs 33 min into the flight, the pilot amended his destination to Conroe (CXO), TX, after receiving reports of instrument weather conditions at ACT and visual conditions at CXO. At 4 hrs 12 min into the flight, the pilot received clearance for an instrument approach to runway 14 at CXO. The pilot's acknowledgement of the clearance was the last radio communication received from the airplane. At 4 hrs 20 min into the flight, the last radar return showed the airplane 4 miles west-northwest of CXO. A witness observed the airplane fly over a road at a low altitude as though 'trying to land,' collide with a tree, hit a power line, and impact the ground. No discolored vegetation or fuel odor was noted at the accident site. One of the two fuel tanks was intact and contained 6 ounces of fuel. Including the accident flight and a 0.8-hr checkout flight, the 25,000-hr pilot had 8.6 hrs flight time 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 inadequate in-flight planning/decision which resulted in a loss of engine power due to fuel exhaustion. Factors were the dark night light conditions prevailing for the ensuing forced landing and the pilot's lack of experience in the make and model of airplane.

Findings

Occurrence #1: LOSS OF ENGINE POWER(TOTAL) - NONMECHANICAL
Phase of Operation: APPROACH

Findings
1. (C) FLUID,FUEL - EXHAUSTION
2. (C) IN-FLIGHT PLANNING/DECISION - INADEQUATE - PILOT IN COMMAND
3. (F) LACK OF TOTAL EXPERIENCE IN TYPE OF AIRCRAFT - PILOT IN COMMAND

Occurrence #2: FORCED LANDING
Phase of Operation: DESCENT - EMERGENCY

Occurrence #3: IN FLIGHT COLLISION WITH OBJECT
Phase of Operation: DESCENT - EMERGENCY

Findings
4. OBJECT - TREE(S)
5. OBJECT - WIRE,TRANSMISSION
6. (F) LIGHT CONDITION - DARK NIGHT

Occurrence #4: IN FLIGHT COLLISION WITH TERRAIN/WATER
Phase of Operation: DESCENT - UNCONTROLLED

Factual Information

HISTORY OF FLIGHT

On November 7, 1998, at 1900 central standard time, a Piper PA-28R-200 airplane, N4726R, operated by MVP Aero Academy, Inc., of Houston, Texas, impacted terrain during a forced landing following a loss of engine power near Conroe, Texas. The airline transport rated pilot and his two passengers were fatally injured, and the airplane sustained substantial damage. An instrument flight rules (IFR) flight plan was filed for the 14 Code of Federal Regulations Part 91 personal cross-country flight, which originated from Searcy, Arkansas, approximately 1439. Dark night visual meteorological conditions prevailed at the time of the accident.

According to MVP Aero Academy personnel, on November 4, 1998, the pilot completed a 0.8-hour checkout flight with a flight instructor in the airplane at the Montgomery County Airport (CXO) in Conroe. The pilot then scheduled the airplane from November 5 through 9 for a cross-country trip to visit relatives in Arkansas.

The pilot's logbook, which was recovered from the airplane and examined by the NTSB investigator-in-charge (IIC), contained two entries dated November 5, 1998. The first entry was for a 3-hour 6-minute flight from CXO to Saline County Airport (M99), Benton, Arkansas, and the second entry was for a 20-minute flight from M99 to Dennis F. Cantrell Field Airport, Conway, Arkansas. There were no further entries in the logbook.

At 1052, on the day of the accident, the pilot telephoned the Automated Flight Service Station in Jonesboro, Arkansas, and filed an IFR flight plan for a flight from the Searcy Municipal Airport (M07) to the Waco Regional Airport (ACT) in Waco, Texas. He then requested and received a pilot weather briefing for the proposed flight. When filing the flight plan, the pilot stated that the estimated time en route for the flight was 3 hours 10 minutes and that the airplane carried enough fuel to fly for 4 hours.

Refueling records obtained from the Searcy Municipal Airport indicated that 25.2 gallons of 100LL aviation fuel were added to the airplane on the day of the accident. During a telephone interview conducted by the NTSB IIC, the lineman who fueled the airplane stated that he did not recall fueling the airplane and did not know if the tanks were "topped off."

At 1424, prior to takeoff, the pilot contacted Little Rock Approach and requested an IFR clearance to ACT. Little Rock Approach issued an IFR clearance and at 1434, released the airplane. At 1439, the pilot made a radio call to Little Rock Approach indicating that the airplane was airborne off of Searcy. At 1709, the pilot contacted the Automated Flight Service Station in Fort Worth, Texas, and obtained the current reported weather conditions at ACT and CXO. The reported weather at ACT included visibility of 2 statute miles in mist and ceiling 200

feet overcast. The reported weather at CXO included visibility 10 miles, ceiling 2,400 feet broken, 3,100 feet overcast. At 1712, 2 hours and 33 minutes into the flight, the pilot amended his destination to CXO.

At 1841, the airplane was handed off from the Houston Air Route Traffic Control Center to Houston Terminal Radar Approach Control (TRACON). At 1843:05, the controller asked the pilot, "do you want an ILS [instrument landing system] approach or do you think you can do a visual?" In response, the pilot requested "a practice ILS." At 1850, 4 hours and 12 minutes into the flight, the pilot received clearance for the ILS approach to runway 14 at CXO and was told to switch to the airport advisory frequency. The pilot acknowledged the approach clearance, and there were no further radio communications with air traffic control. According to the radio operator on duty at the airport at the time of the accident, he heard no transmissions from the accident airplane.

Examination of radar data recorded by Houston TRACON revealed that when the pilot received the approach clearance, the airplane was at an altitude of 2,100 feet msl, approximately 7.5 nautical miles northwest of CXO. Between 1850:17 and 1855:21, the airplane continued on a southeasterly heading towards CXO and descended to an altitude of 1,100 feet msl. The airplane then made a right turn to a northwesterly heading, followed by left turn to a southerly heading. Between 1857:03 and 1858:12, the airplane continued to head south and descended to 700 feet msl. The last recorded radar return at 1858:53 showed the airplane 4 nautical miles west-northwest of CXO.

A witness, who was driving southbound on Highway 75, reported to local authorities that she observed the airplane pass over her vehicle flying south over the highway at a low altitude "like it was trying to land on the highway." She heard no sound from the airplane's engine. She observed the airplane collide with the top of a tree on the west side of the road, hit a power line paralleling the west side of the road, and then impact the ground. According to the witness, "visibility was good, with a light drizzling rain."

Another witness saw the lights of the airplane as it passed from north to south directly over his position, which was on the west side of Highway 75 about 250 yards north of the accident site. The witness reported that he "heard nothing" as the airplane passed over. "A few seconds later," the airplane "started rocking from one side to the other" and "crashed on power lines." According to the witness, it was "raining, but very light, I did not need an umbrella" and "it was also very dark."

Law enforcement officers, who responded to the accident, were concerned about a "ticking" noise that could be heard coming from the engine compartment of the airplane. They contacted a local aircraft pilot/mechanic, who arrived at the site approximately 1 hour after the accident. During a personal interview with the NTSB IIC, the mechanic reported that when he arrived at the site, the airplane's navigation lights were illuminated and the electric fuel boost pump mounted on the firewall was operating. He turned off the master switch and "all other electrical switches." The mechanic stated that there was "no fuel smell" at the site.

PERSONNEL INFORMATION

The pilot held an airline transport pilot certificate with a multiengine land airplane rating and type ratings in B-707, B-720, B-727, B-757, B-767, and L-1011 airplanes. Additionally, he had commercial pilot privileges in single engine land airplanes and private pilot privileges in lighter-than-air free balloons. He held a second class medical certificate dated January 12, 1998, with the limitation: must wear corrective lenses.

According to MVP Aero Academy's checkout record for the pilot, as of July 4, 1998, the pilot had accumulated a total of 25,000 hours flight time. The checkout record indicated the pilot had 2,000 hours in single engine land airplanes, 23,000 hours in multiengine land airplanes, 5,000 hours night flight time, and 6,000 hours instrument flight time.

Other than the checkout flight on November 4, 1998, and the two flights logged on November 5, 1998, the pilot's logbook did not indicate further experience in PA-28R-200 airplanes. The pilot's total time in the PA-28R-200 was determined to be 8.6 hours by adding the logged flight times and the accident flight time.

AIRCRAFT INFORMATION

Examination of the airplane's maintenance records by the NTSB IIC revealed that the 1972 model Piper Arrow's most recent annual inspection was completed on June 3, 1998. The airplane received a 100-hour inspection on August 20, 1998, at an airframe total time of 5,771 hours. As of that date, the engine had accumulated 1,625 hours since major overhaul. When the accident occurred, the airplane and engine had accumulated 97 hours since the 100-hour inspection. Review of the maintenance records revealed no evidence of any uncorrected maintenance discrepancies.

According to the PA-28R-200 Information Manual, the fuel system incorporated two 25-gallon fuel tanks, one in each wing, with a total of 48 usable gallons. The manual indicated that at an engine power setting of 75 percent, the fuel consumption would be 10.15 gallons per hour. At this power setting, with full fuel tanks, the fuel endurance of the airplane would be 4 hours 44 minutes.

METEOROLOGICAL INFORMATION

At 1903, the reported weather conditions at CXO were wind direction variable at 4 knots, visibility 6 statute miles, light rain, mist, few clouds at 1,900 feet, ceiling 3,600 feet broken, 4,900 feet overcast, temperature 17 degrees C (64 degrees F), dewpoint 16 degrees C (62 degrees F), altimeter setting 30.11 inches of mercury, and remarks: rain began at 1859.

WRECKAGE AND IMPACT INFORMATION

The accident site was located using a global positioning satellite (GPS) receiver at 30 degrees 22 minutes 49 seconds north latitude and 95 degrees 28 minutes 44 seconds west longitude. Using the GPS location, the distance and magnetic bearing to CXO were calculated at 3.8 nautical miles and 113 degrees, respectively.

The main wreckage was located approximately 25 feet west of Highway 75 and 335 feet south of a 50-foot-tall pine tree, which had several freshly cut branches lying on the ground at its base. The right wingtip was found about 105 feet south of the tree and 38 feet west of a direct line from the tree to the main wreckage. The outboard section of the right wing was found on the east edge of Highway 75, about 105 feet south of the tree and 50 feet east of a direct line from the tree to the main wreckage. No discolored vegetation or fuel odor was noted at the accident site.

The fuselage was resting on its right side on a measured magnetic heading of 330 degrees. The left wing remained attached to the fuselage and displayed no visible damage. The left main landing gear was down and locked, and the left flap was in the up position. The inboard section of the right wing was lying parallel to and beneath the fuselage. It was structurally separated at the wing root, remaining attached to the fuselage only by an aileron control cable. Control continuity was established from the control surfaces to the cockpit for the stabilator, rudder, and ailerons.

The left wing fuel tank was intact, and approximately 6 ounces of fuel were drained from the tank. The right wing fuel tank was compromised and contained no fuel. Both the left and right wing fuel tank caps were in place, and there was no evidence of fuel staining on the upper and lower wing surfaces or on the lower fuselage skin of the airplane. Examination of the cockpit revealed that the fuel selector was positioned to the right tank. The firewall in the gascolator mounting area was buckled, and the gascolator bowl was found partially separated and contained no fuel.

The engine, a 200-horsepower Lycoming IO-360-C1C, remained attached to the engine mount. The propeller remained attached to the crankshaft, and both blades remained attached to the hub. One blade was bent aft, and the other blade displayed no visible bending or twisting. After removal of the propeller, engine continuity was confirmed to all of the cylinders and to the accessory section by hand rotation. Both magnetos sparked at all terminals when rotated by hand. The spark plug electrodes of all eight plugs were uniformly gray in color. A few drops of fuel were found in the engine driven fuel pump and in the fuel manifold valve.

MEDICAL AND PATHOLOGICAL INFORMATION

The Office of the Medical Examiner of Harris County, Houston, Texas, performed an autopsy of the pilot. Toxicological tests performed by the FAA's Toxicology and Accident Research Laboratory were negative for carbon monoxide, cyanide, ethanol, and drugs.

ADDITIONAL INFORMATION

The airplane was released to a representative of the owner on January 9, 1999.

Pilot Information

Certificate:	Airline transport; Commercial; Flight instructor; Private	**Age:**	62,Male
Airplane Rating(s):	Single-engine land; Multi-engine land	**Seat Occupied:**	Left
Other Aircraft Rating(s):	Balloon	**Restraint Used:**	
Instrument Rating(s):	Airplane	**Second Pilot Present:**	No
Instructor Rating(s):	Airplane single-engine; Instrument airplane	**Toxicology Performed:**	Yes
Medical Certification:	Class 2 Valid Medical--w/ waivers/lim	**Last FAA Medical Exam:**	January 12, 1998
Occupational Pilot:	No	**Last Flight Review or Equivalent:**	
Flight Time:	25000 hours (Total, all aircraft), 9 hours (Total, this make and model)		

Aircraft and Owner/Operator Information

Aircraft Make:	Piper	**Registration:**	N4726R
Model/Series:	PA-28R-200 PA-28R-200	**Aircraft Category:**	Airplane
Year of Manufacture:		**Amateur Built:**	
Airworthiness Certificate:	Normal	**Serial Number:**	28R-7235172
Landing Gear Type:	Retractable - Tricycle	**Seats:**	4
Date/Type of Last Inspection:	August 20, 1998 100 hour	**Certified Max Gross Wt.:**	2650 lbs
Time Since Last Inspection:	97 Hrs	**Engines:**	1 Reciprocating
Airframe Total Time:	5868 Hrs	**Engine Manufacturer:**	Lycoming
ELT:	Installed, activated, did not aid in locating accident	**Engine Model/Series:**	IO-360-C1C
Registered Owner:	KENNETH J. ZETKA	**Rated Power:**	200 Horsepower
Operator:	MVP AERO ACADEMY, INC.	**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:	CXO ,245 ft msl	**Distance from Accident Site:**	4 Nautical Miles
Observation Time:	19:03 Local	**Direction from Accident Site:**	113°
Lowest Cloud Condition:	Scattered / 1900 ft AGL	**Visibility**	6 miles
Lowest Ceiling:	Broken / 3600 ft AGL	**Visibility (RVR):**	
Wind Speed/Gusts:	4 knots / None	**Turbulence Type Forecast/Actual:**	/
Wind Direction:	0°	**Turbulence Severity Forecast/Actual:**	/
Altimeter Setting:	30 inches Hg	**Temperature/Dew Point:**	18°C / 17°C
Precipitation and Obscuration:	Light - None - Rain		
Departure Point:	SEARCY (M07)	**Type of Flight Plan Filed:**	IFR
Destination:	(CXO)	**Type of Clearance:**	IFR
Departure Time:	14:39 Local	**Type of Airspace:**	Class E

Airport Information

Airport:	MONTGOMERY COUNTY AIRPORT CXO	**Runway Surface Type:**	Asphalt
Airport Elevation:	245 ft msl	**Runway Surface Condition:**	Wet
Runway Used:	14	**IFR Approach:**	ILS
Runway Length/Width:	6000 ft / 150 ft	**VFR Approach/Landing:**	Forced landing

Wreckage and Impact Information

Crew Injuries:	1 Fatal	**Aircraft Damage:**	Substantial
Passenger Injuries:	2 Fatal	**Aircraft Fire:**	None
Ground Injuries:	N/A	**Aircraft Explosion:**	None
Total Injuries:	3 Fatal	**Latitude, Longitude:**	30.379304,-95.379402(est)

Administrative Information

Investigator In Charge (IIC):	Snyder, Georgia
Additional Participating Persons:	JAMES R WATSON; HOUSTON , TX MICHAEL MCCLURE; VERO BEACH , FL GREGORY ERIKSON; WILLIAMSPORT , PA
Original Publish Date:	September 19, 2000
Last Revision Date:	
Investigation Class:	Class
Note:	
Investigation Docket:	https://data.ntsb.gov/Docket?ProjectID=45264