National Transportation Safety Board
Aviation Accident Final Report

Location:	GREAT FALLS, MT	**Accident Number:**	SEA98FA078
Date & Time:	05/19/1998, 1536 MDT	**Registration:**	N121BE
Aircraft:	Piper PA-31T1	**Aircraft Damage:**	Destroyed
Defining Event:		**Injuries:**	2 Fatal
Flight Conducted Under:	Part 91: General Aviation - Instructional		

Analysis

The flight was on a practice nondirectional beacon (NDB) approach to Great Falls runway 34 in visual conditions. Abeam the final approach fix, the aircraft was 4 miles right of course. Upon being advised of this by ATC, the pilot corrected back to final with a 60-degree intercept angle, rolling out on course 3 miles from the runway. When the pilot called missed approach, the local controller (a trainee) instructed the pilot to make a 360-degree right turn to enter right downwind for runway 3, and the pilot acknowledged. The controller trainee then amended this instruction to a 180-degree right turn to enter right downwind for runway 21, then to a 180-degree right turn to enter right downwind for runway 3. The crew did not acknowledge the amended instruction. Controllers then observed the airplane had crashed. Witnesses reported the airplane entered a steep descent from a right turn and impacted the ground at a steep angle. The flight was described as recurrent training required by the owner's insurance; however, the second aircraft occupant's airline transport pilot and flight instructor certificates had been revoked, and he held only a private pilot certificate. Investigators found no evidence of aircraft malfunctions.

Probable Cause and Findings

The National Transportation Safety Board determines the probable cause(s) of this accident to be: The flight crew's failure to maintain aircraft control.

Findings

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

Findings
1. (C) AIRCRAFT CONTROL - NOT MAINTAINED - FLIGHTCREW
2. (F) PRESSURE INDUCED BY OTHERS

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

Findings
3. TERRAIN CONDITION - GROUND

Factual Information

HISTORY OF FLIGHT

On May 19, 1998, approximately 1536 mountain daylight time, a Piper PA-31T1 Cheyenne I airplane, N121BE, was observed to enter a steep descent and impact terrain approximately 1/2 mile south of the Great Falls International Airport, Great Falls, Montana. The airplane was destroyed by impact forces and a post-crash fire, and both of the airplane's occupants (consisting of an airline transport pilot, who owned the airplane, and a multiengine and instrument-rated private pilot who was a former airline transport pilot and certificated flight instructor) were fatally injured. It could not be determined which of the aircraft occupants was acting as pilot-in-command of the flight. The 14 CFR 91 local flight was described as an annual recurrent training flight required for the aircraft owner's insurance policy; however, due to the lack of an authorized instructor aboard the aircraft, the operation did not meet the FAA's definition of "flight training" as given in 14 CFR 61.1. Visual meteorological conditions prevailed at the time of the accident, and no flight plan was filed for the flight.

According to FAA air traffic control (ATC) information, the airplane took off from Great Falls under visual flight rules (VFR) approximately 40 minutes before the accident, with the intention of performing air work and practice instrument approaches. After taking off from Great Falls runway 21, the pilot was given radar vectors to intercept the 11-DME (distance measuring equipment) arc for the Great Falls runway 3 instrument landing system (ILS) approach. Transitioning to ILS final from the 11-DME arc, N121BE flew the runway 3 ILS approach to a missed approach.

After starting the missed approach, the flight was cleared direct to the TRULY nondirectional beacon (NDB) to hold, and was instructed to maintain visual flight rules at a hard altitude of 6,500 feet (a military helicopter, BLADE 00, was holding at the nearby Great Falls VORTAC at 7,000 feet at that time, and ATC called this traffic out to N121BE.) The crew of N121BE acknowledged these instructions and stated they were looking for the helicopter. At 1515:44, the Great Falls approach controller again instructed N121BE to maintain 6,500 feet and maintain VFR. In a written statement, the approach controller on duty at the time indicated that he transmitted this instruction because of deviations by N121BE from its assigned altitude. ATC communications transcripts indicated that during an approach controller position changeover briefing at 1517:37, while N121BE was in holding at TRULY, the offgoing approach controller advised the oncoming approach controller: "...watch him he's been all over the altitudes sixty one hundred to sixty seven hundred so you might want to keep an eye on that...."

At approximately 1528, N121BE requested to start outbound for the procedure turn for the NDB runway 34 approach to Great Falls. ATC cleared the pilot for the NDB runway 34 approach and instructed him to maintain VFR. The approach controller also advised N121BE that ATC may have to break the aircraft out prior to the runway 34 approach end due to a formation of F-16 military fighter aircraft recovering from the north. The approach controller then queried the pilot of N121BE regarding his intentions following the NDB approach, and the pilot replied that he wanted to circle to land on runway 3 out of the approach. N121BE was subsequently handed off to the Great Falls local controller at 1532:46.

National Track Analysis Program (NTAP) ATC radar data furnished by the FAA indicated that on the NDB runway 34 approach, N121BE failed to achieve proper course alignment at the final approach fix (TRULY NDB). At the time the aircraft passed abeam TRULY, approximately

1533:03, it was approximately 4 miles right of course. At 1533:09, the Great Falls local controller advised the pilot of N121BE that the aircraft appeared to be well right of the final approach course, and the crew of N121BE replied that they were correcting. NTAP radar data indicated that the aircraft then turned left to intercept the published final approach course at an approximately 60-degree intercept angle. The aircraft subsequently turned right and rolled out on the final approach course at 1535:03, at a point approximately 3 miles south of the runway 34 threshold. The last NTAP radar position recorded on the aircraft was at 1536:03, approximately 3/4 mile south of the runway 34 threshold, at 4,400 feet (726 feet above the airport elevation of 3,674 feet.) The average point-to-point ground speed and vertical velocity between the last two NTAP positions (i.e. from 1535:51 to 1536:03) were computed to be 114 knots and 500 feet per minute down, respectively.

At 1535:45, N121BE called missed approach. According to NTAP radar data, the aircraft was approximately on course, between 1 and 1 1/2 miles from the threshold, at this time. The Great Falls local controller, who indicated in a written statement he was working the position at that time as a "developmental", instructed N121BE to "make a right three sixty enter the right downwind runway three." N121BE replied, "and we'll do a right three sixty for one bravo echo." This reply, at 1535:53, was the last radio transmission received from the accident aircraft. At 1536:08, the local controller transmitted: "cheyene [sic] one bravo echo make that a right one eighty enter the right the right [sic] downwind runway two one traffic two [F-16s] correction enter the right downwind runway three traffic two [F-16s] straight in three miles." N121BE did not reply to this instruction, and the local controller subsequently made two unsuccessful attempts to contact N121BE on the radio, at 1536:36 and again at 1536:41. At 1536:44, the Great Falls tower controllers observed that N121BE had crashed. The crash site was approximately 0.9 mile southeast of the runway 34 threshold and approximately 1/2 mile east of the last NTAP radar position.

The crash was witnessed by several individuals, with nine persons providing statements to NTSB or FAA investigators. Of the nine witnesses, two witnesses reported that prior to impact, the airplane appeared to be flying at a slow speed, and three reported that prior to impact they observed the airplane's wings rocking back and forth. The majority of witnesses reported seeing the airplane in a turn or bank prior to its nose dropping (the direction of turn varied among the witnesses), with three reporting the turn or bank as slight and two reporting it as hard or steep prior to the nose drop. Additionally, three witnesses reported they saw the airplane "spiraling" (describing a rolling motion) to the right before ground impact. Most witnesses also reported observing the airplane in a steep nose-low descent, with three further reporting that the aircraft impacted at a steep nose-low angle estimated variously between 30 and 80 degrees nose-down. Three witnesses reported that the aircraft appeared to momentarily regain (or begin to regain) control immediately prior to ground impact. The majority of witnesses reported that the aircraft burst into flames at impact, with four witnesses reporting they observed no fire or smoke before impact and no witnesses reporting observing any fire or smoke prior to ground impact.

Three of the nine witnesses reported hearing abnormal engine sounds (sputtering, cutting out, or a "waah...waah...waah" sound) prior to ground impact, and one witness reported that the engine or engines seemed to be at full power before impact (although this witness also stated he could not tell whether or not both engines were running at the time.) The remaining five witnesses either did not report any observations regarding engine operation prior to impact, or stated they were unable to tell whether or not the engines were operating during the accident

sequence.

The accident occurred during the hours of daylight at 47 degrees 27.9 minutes North and 111 degrees 21.7 minutes West.

PERSONNEL INFORMATION

The aircraft owner was an applicant for a 14 CFR 135 air taxi operating certificate, and according to FAA inspectors from the Helena, Montana, Flight Standards District Office (FSDO), was nearing his final FAA evaluation for award of the operating certificate. He held an airline transport pilot (ATP) certificate with an airplane multiengine land rating, issued on June 12, 1997. The pilot completed his ATP practical test in a Piper PA-44-180 aircraft with an FAA designated pilot examiner employed by Phoenix East Aviation of Daytona Beach, Florida. A pilot's logbook recovered from the aircraft wreckage, containing entries dated from December 20, 1995, to May 18, 1998, indicated that the aircraft owner had approximately 2,347 hours total time, including 1,114 hours of multiengine time. The logbook further indicated that since December 20, 1995, the aircraft owner had logged 560 hours of pilot time, mostly in N121BE. The pilot completed PA-31T1 pilot initial training at FlightSafety International's Lakeland, Florida, Flight Academy on June 23, 1995.

The second airplane occupant, whose business card identified him as the "director of training" of Vista Turboprop Training Specialists of Ponce Inlet, Florida (listed in the Florida Palm Coast Yellow Pages under the business category "Schools & Instruction - Aircraft Flight Training"), was a former airline transport pilot (ATP) and certificated flight instructor (CFI) whose ATP and CFI certificates were revoked by the FAA in an emergency order of revocation (Docket No. 92EA110026) dated August 27, 1992. The emergency order of revocation was issued on the basis of violations of 14 CFR 61.59(a)(1) and 14 CFR 61.59(a)(2), in which the second aircraft occupant made fraudulent or intentionally false statements and entries in a student's logbook and on the student's FAA application for multiengine instrument privileges. Following the revocation, on November 16, 1993, the FAA authorized the second aircraft occupant to begin reapplying for his pilot, flight instructor, and ground instructor certificates. On April 25, 1996, the FAA reissued a private pilot certificate with airplane single-engine land, airplane multiengine land, and instrument airplane ratings to the second airplane occupant.

Notwithstanding the revocation of his ATP and CFI certificates, the second aircraft occupant's company, Vista Turboprop Training Specialists, was recognized by various aviation insurance underwriters as an approved company to conduct recurrent training required of their policyholders flying various types of turboprop aircraft. These insurance companies included Great American Insurance Company (formerly American Eagle Insurance Company), the company which issued the accident aircraft owner's insurance policy. The former American Eagle official who approved Vista Turboprop's training programs in 1995 told the NTSB that American Eagle had pilot history data on the second aircraft occupant which was current through 1991, and that the pilot history submitted (in the form of a cover letter) by the second aircraft occupant with his 1995 application to American Eagle for recognition did not actually reflect any information regarding the second aircraft occupant's pilot or flight instructor certificates and ratings. A copy of this cover letter, furnished by the former American Eagle official, indicated that the second aircraft occupant had "past experience includ[ing] developing training programs" for various overseas air carriers, and that he had "over 8000 hours of classroom instruction, and over 15000 [sic] hours of total flight time." The former American Eagle official stated he granted recognition to Vista Turboprop's programs after

personally examining Vista Turboprop and Phoenix East Aviation of Daytona Beach, Florida (from whom Vista Turboprop rented training facilities) in December 1995.

According to documentation furnished by the former American Eagle official, Phoenix East Aviation and Vista Turboprop Training Specialists were also jointly involved in a cooperative venture known as "WINGS 500." This venture offered training to flight departments of National Association for Stock Car Auto Racing (NASCAR) race teams.

AIRCRAFT INFORMATION

A gross weight estimate was calculated by the New Piper Aircraft party representative to the investigation, based on aircraft basic weight at time of manufacture, occupant weights from FAA medical certificates, and estimated fuel load based on approximate flight time since last fuel purchase. Based on available loading information, the New Piper party representative calculated the estimated aircraft gross weight at the time of the accident to be 7,627 pounds. (NOTE: The detailed estimated gross weight calculation is presented in the New Piper party representative's report [attached].)

The aircraft's final approach speed is given in the PA-31T1 Information Manual as 102 knots indicated airspeed (KIAS). The aircraft's idle-power stall speed at a gross weight of 7,620 pounds, forward center of gravity (CG), and 15 degrees flaps (the approach and initial balked landing flap setting) is 78 knots calibrated airspeed (KCAS) with wings level and 83 KCAS at a bank angle of 30 degrees. The information manual states that maximum altitude loss in a stall is between approximately 750 and 800 feet. The aircraft's single-engine service ceiling at an outside air temperature of 22 degrees C and aircraft gross weight of 7,600 pounds is approximately 10,400 feet, for aircraft with tip tanks, landing gear up, flaps at 0 degrees, and the inoperative engine's propeller feathered.

The aircraft's air minimum control speed (Vmca) is 90 KCAS (85 KIAS), and its intentional one engine inoperative speed (Vsse) is 105 KIAS.

METEOROLOGICAL INFORMATION

A 1539 Great Falls special automated weather observation reported the following conditions: clear skies; visibility 10 statute miles; wind variable at 5 knots; temperature 22 degrees C; dew point minus 1 degree C; and altimeter setting 29.97 inches Hg. Based on the reported temperature and altimeter setting, and the Great Falls airport elevation of 3,674 feet, the Great Falls airport density altitude at the surface at 1539 was approximately 5,200 feet.

COMMUNICATIONS

The Great Falls local controller on the position at the time of the accident stated he was working the position at that time as a "local control developmental." Information furnished by the FAA indicated that the developmental controller was working the position under the supervision of an on-the-job instructor at that time. At 1535:48, in reply to N121BE's missed approach call from the NDB runway 34 approach, the local controller instructed N121BE to "make a right three sixty enter the right downwind runway three." The crew of N121BE responded, "and we'll do a right three sixty for one bravo echo", at 1535:53. At 1536:08, the local controller amended his instruction, transmitting, "cheyene [sic] one bravo echo make that a right one eighty enter the right the right [sic] downwind runway two one traffic two [F-16s] correction enter the right downwind runway three traffic two [F-16s] straight in three miles." Review of a certified re-recording of the local control frequency tape revealed that the 1536:08

radio call by the local controller required approximately 10 seconds to transmit. N121BE did not respond to this radio call. At 1536:44, after two unsuccessful attempts to reestablish contact with N121BE (at 1536:36 and 1536:41), tower controllers observed that N121BE had crashed.

AERODROME AND GROUND FACILITIES

TRULY NDB, 6.6 nautical miles south of the Great Falls runway 34 threshold, is the holding fix, initial approach fix (IAF), and final approach fix (FAF) for the Great Falls NDB runway 34 approach. The published holding pattern is a standard holding pattern north of the NDB with an inbound holding course of 164 degrees magnetic. From the IAF, an outbound course of 164 degrees magnetic is flown. The procedure turn is to the right to 209 degrees magnetic, followed by a 180-degree left turn to a heading of 029 degrees magnetic to intercept the 344 degree course inbound to TRULY.

The final approach course is 344 degrees magnetic, with TRULY providing final approach course guidance. The final approach incorporates a stepdown fix named LOREN, 2.1 nautical miles from the missed approach point (MAP). LOREN is defined either as the intersection of the Great Falls VORTAC 093 degree radial with the NDB final approach course, or by radar. Minimum altitude from the FAF to LOREN is 4,340 feet (674 feet above touchdown). The circling minimum descent altitude (MDA) for the approach, at a final approach speed of 102 KIAS, is 4,140 feet (466 feet above the airport) if LOREN is used or 4,340 feet (666 feet above the airport) if LOREN is not used. Time from the FAF to the MAP (the runway 34 threshold) is 3 minutes and 53 seconds at 102 knots ground speed.

FLIGHT RECORDERS

The accident aircraft was not equipped, nor was it required to be equipped, with a cockpit voice recorder or flight data recorder.

WRECKAGE

The airplane wreckage was examined at the accident site by investigators from the NTSB, FAA, New Piper Aircraft Corporation, and Pratt & Whitney Canada on May 20 and 21, 1998. The crash site was in a level grass field approximately 0.9 miles southeast of the Great Falls runway 34 approach end. All aircraft components were located at the crash site; the wreckage field encompassed an area approximately 180 feet long (from north to south) and 127 feet wide (from west to east.) A ground burn area extended approximately 90 feet to the south of the main wreckage, and was approximately 46 feet wide. The main wreckage was located in the northwest quadrant of the overall wreckage field and approximately at the northwest corner of the ground burn area. A 16-foot-long ground scar, generally matching the geometry of the right wing (from main landing gear to tip tank), was located approximately 10 feet west of the main wreckage. This ground scar was oriented consistent with an aircraft heading of 095 degrees magnetic at impact. The main wreckage had come to rest upright on a magnetic heading of 136 degrees.

The main wreckage consisted of the remnants of the cabin, wings, both engines, and tail section. The nose section of the aircraft was demolished, with parts of the nose section located in the wreckage field southeast of the main wreckage. The majority of the cabin section and wings inboard of the ailerons had been consumed by fire or severely heat-damaged. However, both wings, both engines, and the tail section were approximately in their normal locations relative to the aircraft fuselage. The left wing tip tank had separated from the wing tip and was

located about 9 feet southeast of the left wing. The right wing tip tank remained at the right wing tip in its normal location. The left propeller had separated from the engine at the reduction gearbox housing. The left propeller, with two blades still attached to the hub, was located about 20 feet southeast of the left wing. The third left propeller blade, separated from the hub, was located adjacent to the loose left wing tip tank. The right propeller remained attached to the right engine, with one blade broken loose from the hub and located underneath the remainder of the right propeller. The aircraft tail section aft of the cabin entry door was largely free of fire or impact damage. The aircraft's flaps were found to be extended 15 degrees (the approach and initial balked landing setting), and both main landing gear actuator cylinders were found to be retracted.

Investigators found the power quadrant and most engine instruments in the aircraft's cockpit section. All engine and propeller controls were fully, or nearly fully, forward except for the right engine condition lever, which was found in the "stop" position (the corresponding condition lever linkage on the right engine was heavily damaged, but was also in a position corresponding to "stop"). Surviving engine instruments were observed to be captured at the following indications: left engine torque 100 pound-feet (lb-ft); right engine torque 0 lb-ft; left engine interstage turbine temperature (ITT) approximately 395 degrees C; left propeller RPM approximately 2,000; right propeller RPM 0; left gas generator (Ng) RPM approximately 69%; right Ng RPM approximately 80%; left fuel flow approximately 100 pounds per hour (PPH); right fuel flow approximately 60 PPH; and right engine oil temperature approximately 35 degrees C (yellow arc.) The left engine oil temperature, right engine ITT, both fuel pressure, and both engine oil pressure indicators were destroyed or missing.

The second aircraft occupant's April 25, 1996, private pilot certificate, along with a check from the accident aircraft's owner (dated May 18, 1998, made out to "Vista Turboprop" in the amount of $2,000, and annotated "Cheyenne training" in the memo section), were found in the second aircraft occupant's wallet during the on-site examination. A promotional flyer for Vista Turboprop Training Specialists, offering commercial or ATP certificate upgrades at no additional charge to customers who completed "recurrent training" with the company, was also found in a personal bag in the aircraft wreckage. This flyer contained a photograph of the accident aircraft owner standing in front of N121BE with the second aircraft occupant. A caption to this photo indicated that the accident aircraft owner was receiving his ATP certificate from the second aircraft occupant while also undergoing recurrent training at Vista Turboprop in June 1997.

Investigators did not find any evidence of preimpact airframe failure, systems failure, or inflight fire in the aircraft wreckage.

FIRE

Most witnesses reported a fire erupted at ground impact. At the accident site, the wreckage was found to be extensively fire-damaged, and a 90- by 46-foot ground burn area was observed by investigators. No witnesses indicated observing any fire or smoke coming from the airplane prior to ground impact, and no evidence of inflight fire was found by investigators at the accident site.

MEDICAL AND PATHOLOGICAL INFORMATION

Autopsies on both aircraft occupants were conducted at Columbus Hospital, Great Falls, Montana, on May 20, 1998. The autopsies determined death for both occupants to be

secondary to severe trauma incurred in the crash. No sign of sudden medical catastrophe was found in either aircraft occupant at autopsy.

Toxicological testing on both aircraft occupants was performed by the FAA Civil Aeromedical Institute (CAMI), Oklahoma City, Oklahoma. Toxicological testing on the aircraft owner screened for carbon monoxide, cyanide, ethanol, and drugs and did not detect any of these substances. Toxicological testing on the second aircraft occupant screened for ethanol and drugs. No ethanol was detected in the second aircraft occupant's vitreous humor, and phenylpropanolamine (a cold/cough preparation) was detected in the second aircraft occupant's liver fluid. Carbon monoxide and cyanide tests were not performed on the second aircraft occupant due to lack of suitable specimens.

TESTS AND RESEARCH

The aircraft's two Pratt & Whitney Canada PT6A-11 turboprop engines (left engine serial number 10219 and right engine serial number 10214) were sent to the facilities of the engine manufacturer, Pratt & Whitney Canada, for disassembly/teardown examination. This examination was conducted at the Pratt & Whitney Canada Service Investigation Facilities at St. Hubert, Quebec, Canada, from September 22-24, 1998. The examination was conducted with the U.S. NTSB investigator-in-charge (IIC) in attendance and under his supervision. Investigators from The New Piper Aircraft and Pratt & Whitney Canada also participated in the examination. During the teardown examination of the right engine, it was noted that the idle control linkage assembly was fractured from the fuel control unit housing and the linkage was in the cut-off position; however, the cut-off valve linkage was deformed, with the cut-off valve in the run position.

Pratt & Whitney Canada's report of the teardown examination of both engines (Report No. TL-1372, dated October 27, 1998; narrative attached) indicated that there were no indications of any operational dysfunction to any of the engine components or controls examined, and concluded: "Both of the engines displayed similar rotational signatures to their internal components characteristic of the engines' producing power at impact, likely in a middle power range. The engines displayed no indications of any pre-impact anomalies or distress that would have precluded normal operation prior to impact."

The aircraft's two three-bladed Hartzell HC-B3TN-3/T10173-8 propellers were sent to the facilities of the propeller manufacturer, Hartzell Propeller Inc. of Piqua, Ohio, for disassembly/teardown examination. This examination was conducted at the manufacturer's facilities under FAA supervision on September 21, 1998. Hartzell's report of this examination, dated October 14, 1998 (narrative attached), stated there were no blade angle indications that were reliable pre-impact indications, but noted that both propellers had symmetrical damage. Hartzell's report included the following conclusions:

1. The propellers were rotating at the time of impact and were not feathered.

2. The amount of power could not be determined; however, the similarity of damage indicated similarity of power, which Hartzell stated was not consistent with the report of power off (condition lever off) on the right engine.

3. No propeller discrepancies were noted that could have precluded normal operation.

ADDITIONAL INFORMATION

The former American Eagle Insurance Company official provided a copy of Vista Turboprop's

"Initial Training Program: Turboprop Qualification Pilot Courses" syllabus to the NTSB. A review of engine-out flight training event procedures presented in this syllabus revealed the following:

1. "Maneuvering With Powerplant Failure" was to be practiced at a minimum altitude of 4,000 feet above the terrain "until the trainee has demonstrated his/her ability to apply proper rudder control forces during partial power maneuvering and satisfactorily accomplish the Engine Failure Checklist and procedure."

2. "Dynamic Engine Cuts" (a maneuver in which one engine is reduced to idle with the aircraft in a climb configuration at the best-angle-of-climb airspeed, which the syllabus stated was "designed to give the trainee the FEEL for the control required during high asymmetrical power setting") were to be accomplished at a minimum altitude of 4,000 feet above the terrain.

3. "Simulated Missed Approach Procedures (Single Engine)" were performed at altitude to a simulated field elevation.

4. The description of "Landing With Simulated Powerplant Failure" stated: "For practice purposes, it is unnecessary to shut down the engine during this maneuver, thereby making it unavailable for use during actual emergency conditions. Engine failure will be simulated by placing the throttle of the affected engine to zero thrust position."

The airplane wreckage was released to Mr. Tracy Barrus of Barrus & Stiger, Bellevue, Washington, on March 17, 1999. Mr. Barrus is the insurance adjuster representing the aircraft owner's estate.

Additional Persons Participating in this Accident Investigation (continued):

Thomas Berthe Pratt & Whitney Canada St. Hubert, Quebec, Canada

Thomas McCreary Hartzell Propeller Inc. Piqua, OH 45356

Gary Pollak FAA FSDO Helena, MT 59601

Pilot Information

Certificate:	Airline Transport	**Age:**	46, Male
Airplane Rating(s):	Multi-engine Land; Single-engine Land	**Seat Occupied:**	Left
Other Aircraft Rating(s):	None	**Restraint Used:**	
Instrument Rating(s):	Airplane	**Second Pilot Present:**	Yes
Instructor Rating(s):	None	**Toxicology Performed:**	Yes
Medical Certification:	Class 1 Valid Medical--no waivers/lim.	**Last FAA Medical Exam:**	05/29/1997
Occupational Pilot:		**Last Flight Review or Equivalent:**	
Flight Time:	2347 hours (Total, all aircraft), 49 hours (Last 90 days, all aircraft), 18 hours (Last 30 days, all aircraft), 7 hours (Last 24 hours, all aircraft)		

Aircraft and Owner/Operator Information

Aircraft Make:	Piper	**Registration:**	N121BE
Model/Series:	PA-31T1 PA-31T1	**Aircraft Category:**	Airplane
Year of Manufacture:		**Amateur Built:**	No
Airworthiness Certificate:	Normal	**Serial Number:**	31T-8004036
Landing Gear Type:	Retractable - Tricycle	**Seats:**	7
Date/Type of Last Inspection:	04/24/1998, AAIP	**Certified Max Gross Wt.:**	8700 lbs
Time Since Last Inspection:	14 Hours	**Engines:**	2 Turbo Prop
Airframe Total Time:	2226 Hours	**Engine Manufacturer:**	P&W
ELT:	Installed	**Engine Model/Series:**	PT6A-11
Registered Owner:	BRUCE L. ERICKSON	**Rated Power:**	500 hp
Operator:	BRUCE L. ERICKSON	**Operating Certificate(s) Held:**	None

Meteorological Information and Flight Plan

Conditions at Accident Site:	Visual Conditions	**Condition of Light:**	Day
Observation Facility, Elevation:	GTF, 3674 ft msl	**Distance from Accident Site:**	0 Nautical Miles
Observation Time:	1539 MDT	**Direction from Accident Site:**	0°
Lowest Cloud Condition:	Clear / 0 ft agl	**Visibility**	10 Miles
Lowest Ceiling:	None / 0 ft agl	**Visibility (RVR):**	0 ft
Wind Speed/Gusts:	5 knots /	**Turbulence Type Forecast/Actual:**	/
Wind Direction:	Variable	**Turbulence Severity Forecast/Actual:**	/
Altimeter Setting:	29 inches Hg	**Temperature/Dew Point:**	22°C / -1°C
Precipitation and Obscuration:			
Departure Point:	(GTF)	**Type of Flight Plan Filed:**	None
Destination:		**Type of Clearance:**	VFR
Departure Time:	1455 MDT	**Type of Airspace:**	Class D; TRSA

Airport Information

Airport:	GREAT FALLS INTL (GTF)	**Runway Surface Type:**	
Airport Elevation:	3674 ft	**Runway Surface Condition:**	
Runway Used:	34	**IFR Approach:**	ADF/NDB; Circling; Practice
Runway Length/Width:		**VFR Approach/Landing:**	None

Wreckage and Impact Information

Crew Injuries:	2 Fatal	**Aircraft Damage:**	Destroyed
Passenger Injuries:	N/A	**Aircraft Fire:**	On-Ground
Ground Injuries:	N/A	**Aircraft Explosion:**	None
Total Injuries:	2 Fatal	**Latitude, Longitude:**	

Administrative Information

Investigator In Charge (IIC):	GREGG NESEMEIER	**Report Date:**	01/11/2000
Additional Participating Persons:	STEPHEN J JONES; HELENA, MT ROBERT SPEICHER; HELENA, MT CHARLES R LITTLE; CHINO HILLS, CA JAMES C LONSDALE; VANCOUVER, WA		
Publish Date:			
Investigation Docket:	NTSB accident and incident dockets serve as permanent archival information for the NTSB's investigations. Dockets released prior to June 1, 2009 are publicly available from the NTSB's Record Management Division at pubinq@ntsb.gov, or at 800-877-6799. Dockets released after this date are available at http://dms.ntsb.gov/pubdms/.		