Aviation Investigation Final Report

Location:	Sitka, Alaska	**Accident Number:**	ANC07FA073
Date & Time:	August 6, 2007, 12:55 Local	**Registration:**	N35CX
Aircraft:	Piper PA-46-350P	**Aircraft Damage:**	Destroyed
Defining Event:		**Injuries:**	4 Fatal
Flight Conducted Under:	Part 91: General aviation - Personal		

Analysis

The private, instrument-rated pilot, was on an IFR cross-country flight, and had been cleared for a GPS approach. He reported that he was 5 minutes from landing, and said he was circling to the left, to land the opposite direction from the published approach. The traffic pattern for the approach runway was right traffic. Instrument meteorological conditions prevailed, and the weather conditions included a visibility of 3 statute miles in light rain and mist; few clouds at 400 feet, 1,000 feet overcast; temperature, 55 degrees F; dew point, 55 degrees F. The minimum descent altitude, either for a lateral navigation approach, or a circling approach, was 580 feet, and required a visibility of 1 mile. The missed approach procedure was a right climbing turn. A circling approach north of the runway was not approved. Witnesses reported that the weather included low clouds and reduced visibility due to fog and drizzle. The airplane was heard, but not seen, circling several times over the city, which was north of the runway. Witnesses saw the airplane descending in a wings level, 30-45 degree nose down attitude from the base of clouds, pitch up slightly, and then collide with several trees and an unoccupied house. A postcrash fire consumed the residence, and destroyed the airplane. A review of FAA radar data indicated that as the accident airplane flew toward the airport, its altitude slowly decreased and its flight track appeared to remain to the left side (north) of the runway. The airplane's lowest altitude was 800 feet as it neared the runway, and then climbed to 1,700 feet, where radar contact was lost, north of the runway. During the postaccident examination of the airplane, no mechanical malfunction was found. Given the lack of any mechanical deficiencies with the airplane, it is likely the pilot was either confused about the proper approach procedures, or elected to disregard them, and abandoned the instrument approach prematurely in his attempt to find the runway. It is unknown why he decided to do a circle to land approach, when the tailwind component was slight, and the shorter, simpler, straight in approach was a viable option. Likewise, it is unknown why he flew towards rising terrain on the north side of the runway, contrary to the published procedures. From the witness statements, it appears the pilot was "hunting" for the airport, and intentionally dove the airplane towards what he perceived was an area close to it. In the process, he probably saw trees and

terrain, attempted to climb, but was too low to avoid the trees.

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 altitude/distance from obstacles during an IFR circling approach, and his failure to follow the instrument approach procedure. Contributing to the accident was clouds.

Findings

Occurrence #1: IN FLIGHT COLLISION WITH OBJECT
Phase of Operation: APPROACH - CIRCLING (IFR)

Findings
1. OBJECT - TREE(S)
2. (C) ALTITUDE/CLEARANCE - NOT MAINTAINED - PILOT IN COMMAND
3. WING - SEPARATION
4. (C) IFR PROCEDURE - NOT FOLLOWED - PILOT IN COMMAND
5. OBJECT - RESIDENCE
6. (F) WEATHER CONDITION - CLOUDS

Factual Information

HISTORY OF FLIGHT

On August 6, 2007, about 1255 Alaska daylight time, a Piper PA-46 airplane, N35CX, was destroyed by impact and postimpact fire when it collided with trees and a residence during an instrument landing approach to the Sitka Rocky Gutierrez Airport, Sitka, Alaska. The airplane was operated by the pilot as an instrument flight rules (IFR) cross-country personal flight under Title 14, CFR Part 91, when the accident occurred. The private certificated, instrument-rated pilot, and the three passengers, received fatal injuries. Instrument meteorological conditions prevailed in the area at the time of the accident. The flight originated at the Victoria International Airport, Victoria, Canada, about 1100, and an IFR flight plan was filed.

According to Federal Aviation Administration (FAA) personnel, the pilot requested the RNAV GPS 11 approach to Sitka about 1209 from controllers at the Anchorage Air Route Traffic Control Center (ARTCC). About 1221, the pilot requested ceiling information from a departing airplane at Sitka, and was told that it was 1,700 feet msl. About 1229, the pilot was instructed to maintain at or above 6,000 feet until established on a published portion of the approach, and was cleared for the GPS 11 approach to Sitka. At 1236, ARTCC controllers provided the pilot with a special weather observation from Sitka at 1227, which included; wind 260 degrees (true) at 11 knots, visibility 5 miles in mist, and few clouds at 800 feet. The ceiling was broken at 1,400 feet, overcast at 2,300 feet, with a temperature of 57 degrees F, dew point temperature of 55 degrees F, and the altimeter was 29.87 inHg. About 1247, the pilot was instructed to contact the Sitka Flight Service Station (FSS).

At 1247, the pilot contacted Sitka FSS personnel and reported that he was "inbound, GPS 11, circle to land, left hand pattern." The Sitka FSS specialist inquired if the pilot had heard the most recent automated terminal information system (ATIS), which was Hotel, and requested an estimated time of arrival. The pilot indicated he had the ATIS information, gave his ETA as 5 minutes, and said, "landing on 29."

A Learjet medevac airplane was holding on the ramp at Sitka to depart on an IFR flight. The crew of the Learjet inquired several times from Sitka FSS personnel about the status of the accident airplane as it proceeded inbound on the instrument approach, as they could not depart until the accident airplane arrived.

About 1257, Sitka FSS personnel contacted Anchorage ARTCC, and inquired if they were in contact with the accident airplane, and they said that they were not. Sitka FSS personnel began trying to locate the airplane, and received notification about 1303 that it had crashed in the city.

Witnesses on the ground in Sitka, both near the harbor and in the city, reported that the weather included low clouds and reduced visibility due to rain. The airplane was heard, but not seen, circling several times over the city, which is north of the runway. One witness saw the airplane descending in a nose down attitude from the base of clouds that he estimated as 500 feet above the ground. Other witnesses saw the airplane descending at an estimated 30 to 45 degree nose low attitude, pitch up, and collide with several trees, separating the outboard portion of the left wing. The inboard section of the left wing separated from the fuselage just prior to the airplane's collision with a house.

The first person to arrive at the crash site reported that the airplane crashed through the front door area of the home. The tail of the airplane was lying in the street, and the fuselage had penetrated the floor. A fire began near the left front portion of the residence, and electrical wires were alive and sparking. About 2 minutes after the crash, the fire spread throughout the house.

An extensive postcrash fire destroyed the airplane.

OTHER DAMAGE

The residence was destroyed by impact and postimpact fire. No one was in the residence at the time of the collision.

PERSONNEL INFORMATION

Pilot Information

The pilot held a private pilot certificate with airplane single-engine land, multiengine land, and instrument airplane ratings. His recent third-class medical certificate was issued on October 7, 2005, and contained no limitations.

FAA records on file in the Airman and Medical Records Center in Oklahoma City, revealed that on the pilot's application for medical certificate, dated October 7, 2005, he indicated that his total aeronautical experience was about 1,200 hours, of which 150 were in the previous 6 months.

The pilot's logbook was found in the wreckage, but it sustained extensive fire damage. The logbook had a page entry of about 1,800 hours of total experience, with about 1,672 hours as pilot-in-command. The pilot completed a flight review and an instrument proficiency check on April 16, 2007.

AIRCRAFT INFORMATION

The six-seat, pressurized airplane had been modified under a supplemental type certificate (STC) for installation of a turboprop engine by JetProp LLC, Spokane, Washington. The engine

was installed under STC ST 00541SE, on February 28, 2003. At the most recent annual inspection, the engine had 1,198.8 hours.

Examination of the maintenance records revealed that the most recent annual inspection was on June 1, 2007. At that time, the airplane had 1,987.9 hours. In addition, a 100 hour inspection was completed on July 27, 2007, 10 days before the accident, at a total time of 2,042.3 hours.

The most recent inspection of the pitot/static system, to include the altimeters and transponder, was on April 7, 2006.

The airplane's instrument panel included, among other equipment, a Garmin GNS 480 communication and navigation unit, a GNS 530 communications and navigation unit, a Garmin MX-20 multifunction display with Garmin Chart View, which had electronic instrument approach charts and airport diagrams, a Garmin GDL-69 satellite weather receiver, a Honeywell KAS-297 altitude/vertical speed selector, an autopilot, HSI, and flight director with a GDC-31 roll/steering adapter that allowed heading selection from either the flight director or a GPS unit. In addition, the airplane was equipped with weather radar. Once programmed, the navigation and communications equipment was capable of flying the approach and missed approach profiles. For the missed approach, the pilot would have to select a vertical speed and altitude. Among other features, terrain depiction information, weather information, approach charts, and the airplane's flight track, were available for display on either of the communication and navigation units, and/or the multifunction display.

METEOROLOGICAL INFORMATION

At 1253, an aviation routine weather report (METAR) at Sitka, Alaska, was reporting, in part: Wind, 290 degrees (true) at 5 knots; visibility, 3 statute miles in light rain and mist; clouds and sky condition, few at 400 feet, 1,000 feet overcast; temperature, 55 degrees F; dew point, 55 degrees F; altimeter, 29.88 inHg; remarks, rain began at 1228.

Several witnesses reported that the weather conditions included overcast skies, with fog and drizzle, and the visibility as low as 500 yards over the city.

COMMUNICATIONS

A transcript of the air to ground communications between the airplane, and the Anchorage ARTCC facility is included in the public docket of this accident.

RADAR DATA

In a review of continuous data recording (CDR) radar data, maintained by the Anchorage ARTCC facility, and recorded from the Biorka Island radar site, the accident airplane appeared to cross the Biorka Island VORTAC, and proceed to the HESOK FIX at 5,000 feet, which is the initial approach fix. The airplane made a left teardrop turn and flew inbound from HESOK

toward the airport. Its altitude slowly decreased, and the flight track appeared to remain to the left side (north) of the runway. The airplane's lowest altitude was 800 feet as it neared the runway, and then climbed to 1,700 feet, where radar contact was lost at 1254:58, north of the runway.

Latitude and longitude position information from the CDR data was used to produce a visual map representation of the airplane's flight path. A copy of the radar data and map is included in the public docket of this accident.

AIRPORT AND GROUND FACILITIES

The Sitka Rocky Gutierrez Airport, elevation 21 feet msl, has a single hard-surfaced runway on a 110 to 290 degree magnetic orientation. Runway 11 is 6,500 feet long, and 150 feet wide, with high intensity runway lights, runway end identifier lights (REIL), and visual approach slope indicator systems (VASI). The Sitka flight service station is on the airport.

The initial approach fix for the RNAV(GPS) runway 11 approach is HESOK. The approach procedure is to cross HESOK at 3,900 feet msl, inbound to the airport on a 112 magnetic heading. HESOK is 13.5 nautical miles from the runway. The final approach fix is TIPEH, 7.5 nautical miles from the runway. The next fix inbound is ILWAF, 3.6 nautical miles from the runway. The missed approach point is WEGWI, .5 nautical miles from the approach end of runway 11. The minimum descent altitude, either for a lateral navigation approach, or a circling approach, is 580 feet, and requires a visibility of 1 mile. The missed approach procedure at WEGWI is a right climbing turn to 5,000 feet, and proceed to the Sitka NDB, located on Biorka Island. Circling north of runway 11/29 is not approved. The traffic pattern for runway 11 is a right traffic pattern.

WRECKAGE AND IMPACT INFORMATION

The National Transportation Safety Board investigator-in-charge (IIC) and the parties to the investigation, examined the airplane wreckage at the accident site, beginning on August 7. Determining the airplane's flight path from the first impact with trees, to the final impact with a residence, was aided by search and rescue personnel who did a grid-type search.

The severed upper portion of about an 80 foot-tall spruce tree was located about 363 feet north-northeast of the outboard half of the left wing, which was found in a residential yard. The left wing section separated at the left main landing gear attach point. The aileron and a portion of the flap was still attached to the wing. About 4 feet outboard from the point of separation was an aft, semi-circular crush signature in the leading edge, which had evidence of tree bark material.

The inboard half of the left wing, from the wing root to the outboard point of separation at the down and locked left main landing gear assembly, was located behind a residence across the street from the final impact point, about 451 feet from the outboard wing segment. The

direction from the initial tree strike, to the impact point, was on a magnetic heading of 207 degrees.

At the point of rest, the airplane was lying at a 45 degree nose down attitude in the burned remnants of the residence. The fuselage was extensively burned. The right wing separated from the fuselage, outboard from the right main landing gear. It was next to the residence and unburned. The aileron remained attached to the wing, but the flap assembly was torn off. Telephone wires were imbedded in and around the wingtip.

The inboard portion of the right wing was still attached to the fuselage, and was fire damaged. It contained the right main landing gear, which was in the down and locked position. The leading edge of the wing section had a semi-circular crush signature that was displaced aft to the spar, and had evidence of tree bark material.

The vertical stabilizer and rudder, and the left and right horizontal stabilizers were torn off the airplane at impact, and were located in the roadway, along with the radar pod.

Due to the impact and postimpact fire damage, the flight controls could not be moved by their respective control mechanisms. The continuity of the flight control cables was established to the cockpit area.

The four-bladed propeller assembly remained connected to the engine. Each blade had extensive damage, with "S" bending, torsional twisting, and aft bending.

After recovery, examination of the engine revealed extensive impact and fire damage. The engine was removed from the fuselage and opened at the "C" flange to gain access to the turbine and combustion sections. The exhaust duct was cut to gain access to the power turbine section. The engine had contact signatures, with scoring and gouging to the compressor 1st stage, compressor turbine shroud and turbine, the power turbine guide vane ring, the interstate baffle, the power turbine shroud and turbine. No preimpact mechanical malfunctions were observed.

MEDICAL AND PATHOLOGICAL INFORMATION

A postmortem examination of the pilot was done under the authority of the Alaska State Medical Examiner, 4500 South Boniface Parkway, Anchorage, Alaska, on August 13, 2007. The examination revealed that the cause of death for the pilot was blunt force injuries.

A toxicological examination was conducted by the FAA's Civil Aeromedical Institute (CAMI) on September, 26, 2007, and revealed that ethanol was detected in muscle, but the ethanol was from sources other than ingestion. No ethanol or drugs were detected in the liver.

FIRE

A postcrash fire consumed the residence, and most of the airplane. Fire personnel arrived within minutes of the crash, as the fire station was within a few blocks of the residence. Their fire-fighting efforts were challenged by fire emanating from the top of a large residential propane tank that had sustained impact damage to its valve assembly.

ADDITIONAL INFORMATION

The Safety Board released the wreckage, located at Sitka, to the owner's representatives on October 29, 2007. No parts or components were retained by the Safety Board.

Pilot Information

Certificate:	Private	**Age:**	45,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 3 Without waivers/limitations	**Last FAA Medical Exam:**	October 1, 2005
Occupational Pilot:	No	**Last Flight Review or Equivalent:**	April 1, 2007
Flight Time:	1800 hours (Total, all aircraft), 1672 hours (Pilot In Command, all aircraft)		

Aircraft and Owner/Operator Information

Aircraft Make:	Piper	**Registration:**	N35CX
Model/Series:	PA-46-350P	**Aircraft Category:**	Airplane
Year of Manufacture:		**Amateur Built:**	
Airworthiness Certificate:	Normal	**Serial Number:**	4636127
Landing Gear Type:	Retractable - Tricycle	**Seats:**	6
Date/Type of Last Inspection:	July 1, 2007 100 hour	**Certified Max Gross Wt.:**	4300 lbs
Time Since Last Inspection:		**Engines:**	1 Turbo prop
Airframe Total Time:	2042 Hrs as of last inspection	**Engine Manufacturer:**	Pratt & Whitney Canada
ELT:	Installed, not activated	**Engine Model/Series:**	PT6A-35
Registered Owner:	Hendrickson Aviation LLC	**Rated Power:**	560 Horsepower
Operator:	Robert Hendrickson	**Operating Certificate(s) Held:**	None

Meteorological Information and Flight Plan

Conditions at Accident Site:	Instrument (IMC)	**Condition of Light:**	Day
Observation Facility, Elevation:	PASI,21 ft msl	**Distance from Accident Site:**	1 Nautical Miles
Observation Time:	12:53 Local	**Direction from Accident Site:**	247°
Lowest Cloud Condition:	Few / 400 ft AGL	**Visibility**	3 miles
Lowest Ceiling:	Overcast / 1000 ft AGL	**Visibility (RVR):**	
Wind Speed/Gusts:	5 knots /	**Turbulence Type Forecast/Actual:**	/
Wind Direction:	290°	**Turbulence Severity Forecast/Actual:**	/
Altimeter Setting:	29.87 inches Hg	**Temperature/Dew Point:**	13°C / 13°C
Precipitation and Obscuration:	N/A - None - Mist		
Departure Point:	Victoria (CYYJ)	**Type of Flight Plan Filed:**	IFR
Destination:	Sitka, AK (PASI)	**Type of Clearance:**	IFR
Departure Time:	11:00 Local	**Type of Airspace:**	

Airport Information

Airport:	Sitka Rocky Gutierrez PASI	**Runway Surface Type:**	
Airport Elevation:	21 ft msl	**Runway Surface Condition:**	
Runway Used:		**IFR Approach:**	Circling;Global positioning system
Runway Length/Width:		**VFR Approach/Landing:**	Unknown

Wreckage and Impact Information

Crew Injuries:	1 Fatal	**Aircraft Damage:**	Destroyed
Passenger Injuries:	3 Fatal	**Aircraft Fire:**	On-ground
Ground Injuries:	N/A	**Aircraft Explosion:**	None
Total Injuries:	4 Fatal	**Latitude, Longitude:**	57.051109,-135.34056

Administrative Information

Investigator In Charge (IIC):	Erickson, Scott
Additional Participating Persons:	Charles Wisner; FAA-AL-JNU FSDO 05; Juneau, AK Michael McClure; Piper Aircraft Inc.; The Colony, TX Thomas Berthe; Pratt and Whitney Canada; South Burlington, VT
Original Publish Date:	June 30, 2008
Last Revision Date:	
Investigation Class:	Class
Note:	The NTSB traveled to the scene of this accident.
Investigation Docket:	https://data.ntsb.gov/Docket?ProjectID=66396