



Aviation Investigation Final Report

Location:	Burlington, Washington	Accident Number:	SEA06FA039
Date & Time:	January 6, 2006, 19:50 Local	Registration:	N36107
Aircraft:	Piper PA-34-200T	Aircraft Damage:	Destroyed
Defining Event:		Injuries:	1 Fatal
Flight Conducted Under:	Part 135: Air taxi & commuter - Non-scheduled		

Analysis

During a night non-precision instrument approach the airplane collided with trees and terrain near the approach end of the landing runway. Air traffic control (ATC) communications transcripts and recorded radar data showed that the aircraft was cleared for a NDB (non-directional radio beacon) approach approximately 10 minutes prior to the accident. Shortly after receiving the clearance, the pilot transmitted a position report, stating the aircraft was procedure turn inbound. Shortly after the pilot's position report, radio and radar contact with the accident aircraft was lost and an Alert Notice (ALNOT) was issued. The last known radar position for the aircraft was approximately 6-tenths of a mile from the approach end of the runway. The wreckage was located the following morning in a heavily wooded area 2,090 feet from the landing threshold of runway 10. The automated weather observation at the airport during the timeframe of the accident reported, in part, visibility 5 statute miles with a broken ceiling at 100 feet above ground level (agl) and an overcast ceiling at 800 feet agl. The minimum descent altitude/height (MDA) for the approach is 1,240 feet above mean sea level, which is 1,096 feet above the touchdown zone elevation of 144 feet. The published minimum visibility for a straight-in NDB approach is 1-1/4 mile. Post accident examination of the engines and airframe revealed no evidence of a pre accident mechanical malfunction or failure.

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 the published minimum descent altitude and not adhering to the published missed approach procedures, which resulted in an in-flight collision with trees and terrain. Factors contributing to the accident were low ceilings and trees.

Findings

Occurrence #1: IN FLIGHT COLLISION WITH OBJECT

Phase of Operation: APPROACH

Findings

1. (F) OBJECT - TREE(S)
2. (C) MINIMUM DESCENT ALTITUDE - NOT MAINTAINED - PILOT IN COMMAND
3. (F) WEATHER CONDITION - LOW CEILING
4. (C) MISSED APPROACH - NOT PERFORMED - PILOT IN COMMAND

Occurrence #2: IN FLIGHT COLLISION WITH TERRAIN/WATER

Phase of Operation: DESCENT - UNCONTROLLED

Findings

5. TERRAIN CONDITION - GROUND

Factual Information

HISTORY OF FLIGHT

On January 6, 2006, about 1950 Pacific standard time, a Piper Seneca PA-34-200T, N36107, was destroyed after colliding with trees and terrain at the Skagit Regional Airport (BVS), Burlington, Washington. The airplane is registered to Airpac Airlines, Inc, of Seattle, Washington, and was being operated as "Airpac 32F" a domestic non-scheduled cargo flight operated in accordance with the provisions of Title 14 CFR Part 135. The airline transport pilot, the sole occupant of the airplane, was fatally injured. Instrument meteorological conditions prevailed at the time of the accident. The flight originated at Bellingham, Washington, (BLI) on an instrument flight rules (IFR) flight plan, approximately 15 minutes prior to the accident. The pilot's flight planned destination was BVS.

On January 6, at 2139, Seattle Flight Service Station issued an Alert Notice (ALNOT) after radio and radar contact with the accident aircraft was lost. The following morning, about 0730, the airplane wreckage was located in a heavily wooded area near the approach runway.

The Aviation division of the Washington State Department of Transportation coordinated search and rescue operations for the missing aircraft. DOT personnel reported that search efforts on the evening of the accident were hampered due to fog and low ceilings.

The pilot was completing the third segment of a six-leg itinerary when the accident occurred. The non-scheduled cargo flight normally originates at Boeing Field, Seattle, Washington, as Airpac 32F, with intermediate stops at Friday Harbor, Washington; Bellingham, Washington; Burlington, Washington; Everett, Washington and Portland, Oregon, ultimately terminating back at Boeing Field.

PERSONNEL INFORMATION

The pilot-in-command held an airline transport pilot (ATP) certificate with ratings for airplane multi-engine land, and commercial privileges for airplane single-engine land. The pilot held a ground instructor certificate with advanced and instrument ratings.

The pilot's most recent FAA second-class medical certificate was issued on June 22, 2005, and contained limitations requiring the pilot to wear corrective lenses.

According to the Pilot/Operator accident report (Form 6120.1/2), completed by Airpac Airlines, the pilot had accumulated approximately 4,685 hours total flying time, including 4,589 hours as pilot-in-command (PIC); 1,062 hours as PIC of multi-engine airplanes; 248 hours of actual instrument time and 220 hours of PIC time in make and model.

The report indicated that the pilot had flown 130 hours in the 90-day period preceding the accident, 58 hours in the 30-day period preceding the accident and 1.4 hours in the 24-hour period prior to the accident.

Training records furnished by the operator indicated that the pilot's most recent 14 CFR Part 135 knowledge check, competency check, line check and demonstrated IFR proficiency check were successfully completed on December 6, 2005. The check ride was conducted in a Piper PA-31-350T Navajo.

The pilot's duty day began, as scheduled, at approximately 1700 on the day of the accident.

The pilot had been employed with Airpac Airlines since May of 2004.

AIRCRAFT INFORMATION

The twin engine Piper Seneca PA-34-200T, Serial number 34-7870294 was manufactured in 1978. The airplane was equipped with two Teledyne Continental Motors (TCM) TSIO-360 engines, rated at 200 horsepower. At the time of the accident, the airplane was configured with two pilot seats and the aft cabin area was configured for cargo type operations. In addition to the originally installed instrumentation and avionics, the airplane was equipped with a Garmin GNS 430 global positioning system (GPS). According to the operator, the GPS was certified for VFR operation only, and the unit was placarded accordingly.

The airplane's last inspection, a phase three inspection in accordance with an approved inspection program (AIP), was completed on January 6, 2006. Maintenance records showed that the airplane's total time at inspection was 7,302 hours. The right engine's total time at inspection was 290.5 hours; the left engine's total time at inspection was also 290.5 hours.

The airplane was equipped for instrument flight rules (IFR) operations. Maintenance records showed that the last altimeter system and altitude reporting equipment test (in accordance with FAR 91.411) was completed on April 8, 2004.

There were no open logbook maintenance discrepancies with the aircraft at the time of the accident.

METEOROLOGICAL INFORMATION

The 1910 METAR weather observation at the Skagit Regional Airport was, in part, visibility 5 statute miles; broken clouds at 100 feet AGL (above ground level); overcast skies at 600 feet AGL.

The 1930 METAR weather observation at the Skagit Regional Airport was, in part, visibility 5 statute miles; broken clouds at 100 feet AGL; overcast skies at 800 feet AGL.

The 1950 METAR weather observation at the Skagit Regional Airport was, in part, visibility 5 statute miles; broken clouds at 100 feet AGL; overcast skies at 800 feet AGL.

The 2010 METAR weather observation at the Skagit Regional Airport was, in part, winds from 170 degrees at 4 knots; visibility 3 statute miles; overcast skies at 200 feet AGL.

According to the U.S. Naval Observatory, official sunset was at 1630, and the end of civil twilight was at 1707.

COMMUNICATIONS/ RADAR DATA

The radar targets attributable to Airpac 32 were identified by transponder code 7026, and began approximately one mile south of the Bellingham Airport. The radar data indicated Airpac 32 tracked a southerly heading from Bellingham to the Skagit Regional Airport. After a continuous climb to 5,100 feet mean sea level (msl), the airplane leveled off briefly (approximately one minute) then began a descent towards the destination airport. The radar track indicated the airplane crossed over the airport at 3,100 feet msl and started a right turn. The turn continued for approximately 360 degrees, in a racetrack type pattern, until the airplane reached the final inbound course for the landing runway. Shortly after reaching the inbound course, radar contact with the aircraft was lost. The last radar position for the aircraft was approximately 6 tenths of a mile (48:29.28 degrees north and 122 26.50 degrees west) from the airport at an altitude of approximately 1000 feet msl. The magnetic bearing from the radar target to the airport was approximately 125 degrees magnetic.

ATC communications:

At 19:36:47, the pilot advised Whidbey approach he was on frequency and climbing through 4,000 feet to 5,000 feet. The approach controller acknowledged the transmission, issued the altimeter setting, and asked the pilot to "...say request at Skagit." The pilot responded, stating that he was going to "...shoot the NDB."

At 19:36:59, the approach controller responded to the pilot stating "...looks like they are IFR" with a broken ceiling of 100 feet and a visibility of five miles.

At 19:37:03, the pilot acknowledged the controller and asked for vectors for the final approach, stating "...if you can get us a um final approach fix that'd be great save us from doing the full turn."

At 19:37:10, the approach controller advised the pilot he was unable to vector him to the final approach fix, stating "Na I don't think I can vector you to the final approach course just when able proceed direct to the Bayview NDB maintain 5,000 expect no delays."

At 19:37:16, the pilot acknowledged the clearance.

At 19:40:35, Whidbey approach cleared the pilot for the approach, stating "Airpac 32 cross the Bayview NDB at or above 3,000 cleared NDB approach runway one zero."

At 19:40:39, the pilot acknowledged the approach controller's clearance.

At 19:46:21, the pilot reported to the approach controller that he was procedure turn inbound. The controller acknowledged the transmission, approved him for a change to advisory frequency and instructed the pilot to report "on deck" via flight service.

At 19:46:29, the pilot acknowledged the controller stating, "Okay wilco Airpac 32 thanks."

At 19:46:56, the pilot reported to Skagit traffic (on Whidbey approach frequency) that he was "on the NDB." The Whidbey approach controller responded, stating "Transmitting Whidbey." This was the last known radio transmission from Airpac 32F.

A complete ATC communication transcript and additional radar data is enclosed in the public docket.

AIRPORT INFORMATION

The Skagit Regional Airport is operated by the Port of Skagit County and serves as the primary airport for both Burlington and Mount Vernon, Washington. The airport has two hard-surfaced asphalt runways, 10/28 and 04/22 magnetic. Runway 10/28 is 5,477 feet long and 100 feet wide. The runway is equipped with medium intensity runway lights (MIRL), runway end identification lights (REIL), and a four-box visual approach slope indicator (VASI) that is located on the left side of runway 10. The runway lights are pilot activated/controlled via the common traffic advisory frequency (CTAF) 123.05.

Aircraft communications at the airport are accomplished via the airport's published common traffic advisory frequency (CTAF) on 123.05. There is no operating air traffic control tower at the airport.

Whidbey Naval Air Station Air Traffic Control provides radar approach/departure control services for the airport on a continuous basis.

There are three non-precision instrument approaches available at the airport, including a Non-Directional Beacon (NDB) and Global Positioning System (GPS) to runway 10, and a GPS to runway 28. The minimum descent altitude/height (MDA) for the straight-in NDB runway 10 approach is 1,240 feet above mean sea level, which is 1,096 feet above the touchdown zone elevation of 144 feet. The procedure turn altitude for the approach is 2,700 feet msl and the inbound course for the approach is 112 degrees. The missed approach point is the NDB, which is located at the airport. The published minimum visibility for a straight-in NDB approach is 1-1/4 mile.

The NDB Runway 10 approach chart is enclosed in the public docket for this report.

The airport is equipped with an Automated Weather Observing System (AWOS-3), which reports altimeter setting, wind data, temperature, dew point, density altitude, visibility and cloud/ceiling data. Refer to the Meteorological Information section of this report for additional weather information.

Personnel from the Port of Skagit reported that there was no lighting outage or anomalies on the day of the accident.

The NDB approach system at the airport was flight checked by the FAA following the accident. Post accident evaluation of the system disclosed no system anomalies or malfunctions.

Section C (Straight-In Category I Approach Procedures Other Than ILS, MLS, or GPS and IFR Landing Minimums - All Airports) of the Operating Specifications for Airpac Airlines specify that "The certificate holder shall not use any IFR Category I landing minimums lower than that prescribed by the applicable published instrument approach procedure."

WRECKAGE AND IMPACT INFORMATION

Personnel from the NTSB, FAA, Piper Aircraft Company and Teledyne Continental Motors accessed the aircraft wreckage on January 7-8, 2005. The wreckage was located on airport property near a dirt access road approximately 2,090 feet from the landing threshold of runway 10. The terrain was flat and heavily wooded. The wreckage field encompassed an area approximately 570 feet in length. A grouping of large trees, with fresh scarring, was noted at the northeast end of the wreckage track. A number of large trees along the wreckage track were topped and de limbed. The magnetic bearing from the broken trees to the main wreckage was approximately 136 degrees. The main wreckage was located at the southeast end of the wreckage distribution track. The remains of the fuselage were found inverted and the nose of the airplane was oriented on a southerly heading.

All aircraft components and flight controls were located at the crash site. Multiple system components, pieces of fragmented flight control surfaces and cockpit equipment were scattered from the point of initial contact with trees to the final resting point of the fuselage.

The main wreckage consisted of the fuselage, empennage, and inboard section of the right wing. Extensive impact damage and fragmentation were noted to the cockpit controls and instrumentation panel. Impact related damage was noted to the top of the vertical stabilizer and rudder. The rudder was found attached to the vertical stabilizer and the stabilizer attached to the fuselage. The stabilator remained attached to the empennage assembly. Leading edge deformation was noted to the entire assembly and extensive impact related damage was noted to the outboard sections of the structure.

The inboard section of the right wing including the right engine assembly was found attached to the fuselage. Extensive leading edge damage and deformation was noted to the entire assembly. The hydraulically actuated right main landing gear was observed in the down position. The outboard section of the right wing was separated from the main wing assembly. The section of wing was located along the wreckage debris path (approximately 225 feet from the initial point of contact) near the base of a large conifer tree. Leading edge rearward crushing and extensive deformation was noted to the assembly.

The right (starboard) propeller assembly was located adjacent to the main wreckage. The assembly had separated, as a unit, from the crankshaft flange. Leading edge abrasions and striations were observed from approximately mid-span to the tip of blade "A". Additional abrasion type damage was noted to the face and cambered surfaces of the blade. Mid-span aft bending and trailing edge damage were noted to blade "B". Leading edge abrasion type damage was observed near the blade root and at the blade tip. The propeller spinner was intact and rearward crushing was noted. Abrasion type damage was noted to the face and cambered surfaces of blade "B".

The left wing assembly separated from the main wreckage and was located along the wreckage debris path. A large section of the wing assembly, to include the engine and landing gear, was located approximately 80 feet (upwind) from the main wreckage. The hydraulically actuated main landing gear (still attached) was observed in the down position. The remaining (outboard) section of the left wing was located near the top of a large tree approximately 115 feet downwind from the initial point of impact. The still-standing tree measured approximately 125 feet in length.

The left side propeller assembly was located near the base of a tree adjacent to the left engine and wing assembly. The assembly separated, as a unit, from the crankshaft flange. The propeller spinner was intact and rearward crushing was noted to the frontal area of the spinner. Abrasion type striations were noted to the face and cambered surfaces of propeller blade "A". Mid-span forward bending was noted to the blade and the tip was curled in an aft direction. Leading and trailing edge damage was noted to propeller blade "B". Abrasion type striations were noted to the face and cambered surfaces of the blade. Forward bending, from the shank to the tip, was noted along the entire length of the blade.

MEDICAL AND PATHOLOGICAL INFORMATION

A postmortem examination of the pilot was conducted under the authority of the Skagit County Coroner's office on January 7, 2006. According to the postmortem report, the pilot's cause of death was attributed to massive blunt trauma to the head, trunk, and extremities secondary to the crash.

The FAA Civil Aerospace Medical Institute (CAMI), Oklahoma City, Oklahoma, conducted a toxicological examination subsequent to the accident. The postmortem toxicology report indicated that no drugs, to include prescribed, over-the-counter, illegal drugs or alcohol were

present in the pilot's system at the time of the accident.

See attached toxicological report for specific test parameters and results.

ADDITIONAL INFORMATION

On February 9, 2006, representatives from the National Transportation Safety Board, Federal Aviation Administration, Teledyne Continental Motors and The New Piper Aircraft Company examined the aircraft's engines at a hangar facility in Kent, Washington.

Examination of the engines revealed no evidence of internal component failure, abnormal wear or pre-impact mechanical failure.

On March 21, 2006, the airplane, engines and associated components were released to CTC Services, Aviation (LAD Inc), Renton, Washington.

Pilot Information

Certificate:	Airline transport	Age:	48,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 With waivers/limitations	Last FAA Medical Exam:	September 1, 2005
Occupational Pilot:	Yes	Last Flight Review or Equivalent:	December 1, 2005
Flight Time:	4685 hours (Total, all aircraft), 230 hours (Total, this make and model), 4509 hours (Pilot In Command, all aircraft), 130 hours (Last 90 days, all aircraft), 58 hours (Last 30 days, all aircraft), 1 hours (Last 24 hours, all aircraft)		

Aircraft and Owner/Operator Information

Aircraft Make:	Piper	Registration:	N36107
Model/Series:	PA-34-200T	Aircraft Category:	Airplane
Year of Manufacture:		Amateur Built:	
Airworthiness Certificate:	Normal	Serial Number:	34-7870294
Landing Gear Type:	Retractable - Tricycle	Seats:	2
Date/Type of Last Inspection:	January 1, 2006 AAIP	Certified Max Gross Wt.:	4750 lbs
Time Since Last Inspection:		Engines:	2 Reciprocating
Airframe Total Time:	7302 Hrs as of last inspection	Engine Manufacturer:	Continental
ELT:	Installed, not activated	Engine Model/Series:	TSIO-360
Registered Owner:	Airpac Airlines, Inc	Rated Power:	200 Horsepower
Operator:		Operating Certificate(s) Held:	On-demand air taxi (135)

Meteorological Information and Flight Plan

Conditions at Accident Site:	Instrument (IMC)	Condition of Light:	Night/dark
Observation Facility, Elevation:	BVS,144 ft msl	Distance from Accident Site:	
Observation Time:	19:50 Local	Direction from Accident Site:	
Lowest Cloud Condition:		Visibility	5 miles
Lowest Ceiling:	Broken / 100 ft AGL	Visibility (RVR):	
Wind Speed/Gusts:	/ None	Turbulence Type Forecast/Actual:	/
Wind Direction:		Turbulence Severity Forecast/Actual:	/
Altimeter Setting:	29.84 inches Hg	Temperature/Dew Point:	48°C
Precipitation and Obscuration:			
Departure Point:	BELLINGHAM, WA (BLI)	Type of Flight Plan Filed:	IFR
Destination:	BURLINGTON/MOUN, WA (BVS)	Type of Clearance:	IFR
Departure Time:	19:30 Local	Type of Airspace:	

Airport Information

Airport:	SKAGIT REGIONAL/BAY VIEW BVS	Runway Surface Type:	Asphalt
Airport Elevation:	144 ft msl	Runway Surface Condition:	Unknown
Runway Used:	10	IFR Approach:	ADF/NDB
Runway Length/Width:	5477 ft / 100 ft	VFR Approach/Landing:	

Wreckage and Impact Information

Crew Injuries:	1 Fatal	Aircraft Damage:	Destroyed
Passenger Injuries:		Aircraft Fire:	None
Ground Injuries:	N/A	Aircraft Explosion:	None
Total Injuries:	1 Fatal	Latitude, Longitude:	48.470832,-122.420829

Administrative Information

Investigator In Charge (IIC): Hogenson, Dennis

Additional Participating Persons: Rod Ziegler; Seattle FSDO; Renton , WA
Andrew Swick; Teledyne Continental Motors ; Mobile , AL
Charles Little ; The New Piper Aircraft, Inc ; Vero Beach , FL
Roger Hanson ; Airpac Airlines ; Seattle , WA

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Last Revision Date:

Investigation Class: [Class](#)

Note: The NTSB traveled to the scene of this accident.

Investigation Docket: <https://data.nts.gov/Docket?ProjectID=63056>

The National Transportation Safety Board (NTSB) is an independent federal agency charged by Congress with investigating every civil aviation accident in the United States and significant events in other modes of transportation—railroad, transit, highway, marine, pipeline, and commercial space. We determine the probable causes of the accidents and events we investigate, and issue safety recommendations aimed at preventing future occurrences. In addition, we conduct transportation safety research studies and offer information and other assistance to family members and survivors for each accident or event we investigate. We also serve as the appellate authority for enforcement actions involving aviation and mariner certificates issued by the Federal Aviation Administration (FAA) and US Coast Guard, and we adjudicate appeals of civil penalty actions taken by the FAA.

The NTSB does not assign fault or blame for an accident or incident; rather, as specified by NTSB regulation, “accident/incident investigations are fact-finding proceedings with no formal issues and no adverse parties ... and are not conducted for the purpose of determining the rights or liabilities of any person” (Title 49 *Code of Federal Regulations* section 831.4). Assignment of fault or legal liability is not relevant to the NTSB’s statutory mission to improve transportation safety by investigating accidents and incidents and issuing safety recommendations. In addition, statutory language prohibits the admission into evidence or use of any part of an NTSB report related to an accident in a civil action for damages resulting from a matter mentioned in the report (Title 49 *United States Code* section 1154(b)). A factual report that may be admissible under 49 *United States Code* section 1154(b) is available [here](#).