National Transportation Safety Board
Aviation Accident Final Report

Location:	Easton, WA	**Accident Number:**	SEA04LA097
Date & Time:	06/01/2004, 1125 PDT	**Registration:**	N6245J
Aircraft:	Piper PA-28-151	**Aircraft Damage:**	Substantial
Defining Event:		**Injuries:**	2 Serious
Flight Conducted Under:	Part 91: General Aviation - Personal		

Analysis

Both airline transport pilots reported that they were flying over mountainous terrain. Estimated altitude above the ground was about 1,500 to 2,000 feet. The pilot-in-command made a turn into a narrow valley that rose to a ridgeline at its end. While in the valley, the pilot-in-command noted the rising terrain and reported that he began a slow full power climb as they approached the rising terrain. The pilot reported that during the climb, the aircraft's performance seemed to decline. The pilot determined that they would not have sufficient altitude to clear the terrain and he began a turn to the left to reverse course, however, the engine did not have enough power to complete the turn before the aircraft collided with the terrain. Post-accident inspection of the aircraft and engine found no evidence of a mechanical failure or malfunction.

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 terrain clearance while maneuvering in mountainous terrain. Mountain terrain was a factor.

Findings

Occurrence #1: IN FLIGHT COLLISION WITH TERRAIN/WATER
Phase of Operation: MANEUVERING

Findings
1. (F) TERRAIN CONDITION - MOUNTAINOUS/HILLY
2. (C) CLEARANCE - NOT MAINTAINED - PILOT IN COMMAND

Factual Information

HISTORY OF FLIGHT

On June 1, 2004, approximately 1125 Pacific daylight time, a Piper PA-28-151, N6245J, registered to Executive Flight Inc., and flown by two pilot employees of The Meridian Group, as a 14 CFR Part 91 personal flight, collided with mountainous terrain about eight miles northwest of Easton, Washington. Visual meteorological conditions prevailed at the time and no flight plan was filed. The aircraft was substantially damaged and both airline transport pilots were seriously injured. The flight originated from Wenatchee, Washington, about 35 minutes prior to the accident. The emergency locator transmitter did activate and was emitting a signal.

The pilots employer reported that earlier in the day, both pilots had flown the company Lear Jet to Executive Flight, Wenatchee, for maintenance. The Piper was a loaner aircraft from Executive Flight for the crew to return to Seattle, Washington.

The airline transport pilot seated in the left seat was acting as pilot-in-command for the flight to Seattle, Boeing Field. This pilot reported in a written statement that after departure, he turned westbound and tuned in the 255 degree bearing from Wenatchee as a reference to the direct course to Boeing Field. The flight remained south of this reference to remain over lower terrain. The pilot stated that the flight continued at an altitude of approximately 4,000 to 4,500 feet mean sea level toward rising terrain. The pilot stated that he began a slow full power climb as they approached the terrain and reported that the "aircrafts performance seemed to decline, and I determined that I would not have sufficient altitude to clear the terrain." The pilot began a turn to the left to reverse course, however, the engine did not have enough power to complete the 180 degree level turn. The pilot reported that this was all he remembered until after the collision.

The airline transport pilot seated in the right seat reported during a telephone interview and subsequent written statement that the total flight time from the time of takeoff to the accident was about 30 to 35 minutes. As he was not the pilot-in-command, he reported that he did not have any instruments in front of him and was not paying attention to the altimeter, but guessed that the altitude that the flight was cruising at was 4,000 to 4,500 feet (1,500 - 2,000 above ground level). The weather was good with a high broken layer at 9,000 feet and unrestricted visibility. The second pilot reported that the pilot-in-command made a turn to the west and entered a narrow valley. The second pilot reported that he was looking at a map and told the pilot that it was a box canyon, however, the pilot continued on course. When the second pilot looked down at the map and then back up again, the aircraft was heading for a ridgeline. Just before colliding with the terrain, the pilot turned the aircraft crosswise to the rising terrain. The second pilot stated that he does not believe that there was a change in the engine noise and was not sure of the engine's performance.

PERSONNEL INFORMATION

The pilot-in-command holds commercial, airline transport pilot and flight instructor certificates and is rated in multi-engine and single-engine land aircraft with an instrument rating. At the time of the accident, the pilot reported a total flight time in all aircraft of 2,425 hours with 1,461 hours as pilot-in-command. A total flight time of seven hours had been accumulated in the make/model aircraft involved in the accident.

The second pilot holds commercial and airline transport pilot certificates and is rated in single-engine land and sea and multi-engine land aircraft with an instrument rating. The second pilot did not report his total flight time, however, a total flight time in all aircraft of 8,800 hours was reported to the Federal Aviation Administration on the pilot's last medical application on January 4, 2004, for a Class I medical certificate.

Both pilots were employed as civilian pilots for The Meridian Group based in Seattle, Washington. The Meridian Group operates a Lear Jet.

METEOROLOGICAL INFORMATION

The nearest weather reporting station to the accident site is Stampede Pass, which is located six nautical miles southwest of the accident site. The weather reported at 1056 indicated broken clouds at 2,200 feet and overcast a 3,300 feet, with visibility of 10 statute miles. Temperature was 49 degrees and the dewpoint was 38 degrees.

At 1156 the weather was reporting broken clouds at 2,400 feet and overcast at 3,000 feet, with visibility of 10 statute miles. Temperature was 50 degrees and the dewpoint was 39 degrees.

WRECKAGE AND IMPACT INFORMATION

The wreckage was located in mountainous terrain at an elevation of about 4,900 feet at North 47 degrees 22.94' and West 121 degrees 12.08'. The surrounding terrain was covered with clear-cut stumps and deadfall. Terrain surrounding the accident site rose to approximately 5,000 feet. During the wreckage recovery by personnel from AvTech Services, Kent, Washington, on June 4, 2004, personnel reported that the wreckage was distributed on a 222 degree magnetic bearing when it struck a three-foot in diameter stump. The aircraft traveled across a stump field with deadfalls and slash covered terrain "cross slope" coming to rest about 100 feet further. The wreckage was aligned (turning nearly 180 degrees around) facing 360 degrees after stopping on a patch of snow. The left wing was partially separated at the wing root. Several leading edge impact indentations were noted along the length of the wing. No fuel was present in the wing tank. The right wing remained attached at the wing root. Fuel was leaking from the fuel vent. Approximately 11 gallons of 100-LL fuel was recovered from the wing tank. The fuel was blue in color and clear.

The engine was canted down resting on the ground with only wiring, plumbing and cables attached. The engine mounts were broken. The propeller assembly separated at the crankshaft flange and was about 15 feet away. The nose area and floor boards/cockpit area displayed impact damage.

The landing gear was punched up through the wings and the left main gear separated. The right main and nose gear were folded back. Both seats displayed downward compression.

ADDITIONAL DATA/INFORMATION

On June 16, 2004, investigators from the National Transportation Safety Board, Federal Aviation Administration, The New Piper Aircraft and Lycoming Engines inspected the airframe and engine at a secured facility in Maple Valley, Washington.

The right wing which remained attached to the airframe at the accident site had been cut at the wing root during recovery. The aileron and flap remained attached at the hinges. Control continuity was established from the bellcrank to wing root. A trace amount of fuel remained in the fuel cell.

The left wing was separated at the wing root. Five distinct circular impacts to the leading edge were noted from root to tip. The flap and aileron remained attached their respective hinges. Control continuity was established from the bellcrank to the wing root. The fuel cell was compromised.

The right side of the fuselage just aft of the back seat was dented inward. Control continuity was established from the aft attach points, forward to the cabin. The stabilator had been removed during recovery. The stabilator trim was positioned 4 degrees nose up. The left side stabilator displayed leading edge indentations. The vertical remained intact with the rudder attached to its respective hinges. The rudder stop bolts were intact.

During the engine inspection of the Lycoming O-320-E3D, it was found that the propeller separated from the crankshaft flange at the mounting bolts. Half of the flange was bent aft. After removal of the vacuum pump to access the gearing, the engine rotated easily and accessory gear and valve train continuity was established. Compression was developed in each cylinder. Each cylinder was borescoped to confirm internal conformity. All top and bottom spark plugs displayed normal operating signatures.

The left magneto was found timed correctly and all leads produced spark. The right magneto was removed and rotated to confirm spark.

Disassembly of the vacuum pump confirmed that the vanes and block were intact.

The fuel pump was removed and found operational. Fuel was still present in the unit.

The oil pickup screen was removed and found clear of contaminants.

The alternator displayed impact damage.

The propeller assembly had separated during the accident sequence. Blade A displayed a smooth bend aft about 30 degrees. Minor gouging was noted at the tip with minor chordwise scratches. Blade B displayed about a 55-60 degree bend forward about 21 inches from the hub. No leading or trailing edge gouges were noted, as well as no chordwise scratching.

The wreckage was released to the owner's representative on June 17, 2004.

Pilot Information

Certificate:	Airline Transport; Flight Instructor; Commercial	**Age:**	24, Male
Airplane Rating(s):	Multi-engine Land; Single-engine Land	**Seat Occupied:**	Left
Other Aircraft Rating(s):	None	**Restraint Used:**	Seatbelt
Instrument Rating(s):	Airplane	**Second Pilot Present:**	Yes
Instructor Rating(s):	Airplane Multi-engine; Airplane Single-engine; Instrument Airplane	**Toxicology Performed:**	No
Medical Certification:	Class 1 Valid Medical--no waivers/lim.	**Last FAA Medical Exam:**	01/20/2004
Occupational Pilot:		**Last Flight Review or Equivalent:**	03/19/2004
Flight Time:	2425 hours (Total, all aircraft), 7 hours (Total, this make and model), 1461 hours (Pilot In Command, all aircraft), 92 hours (Last 90 days, all aircraft), 35 hours (Last 30 days, all aircraft), 3 hours (Last 24 hours, all aircraft)		

Co-Pilot Information

Certificate:		**Age:**	
Airplane Rating(s):		**Seat Occupied:**	
Other Aircraft Rating(s):		**Restraint Used:**	
Instrument Rating(s):		**Second Pilot Present:**	Yes
Instructor Rating(s):		**Toxicology Performed:**	
Medical Certification:		**Last FAA Medical Exam:**	
Occupational Pilot:		**Last Flight Review or Equivalent:**	
Flight Time:			

Aircraft and Owner/Operator Information

Aircraft Make:	Piper	**Registration:**	N6245J
Model/Series:	PA-28-151	**Aircraft Category:**	Airplane
Year of Manufacture:		**Amateur Built:**	No
Airworthiness Certificate:	Normal	**Serial Number:**	28-7615344
Landing Gear Type:	Tricycle	**Seats:**	4
Date/Type of Last Inspection:	02/27/2004, Annual	**Certified Max Gross Wt.:**	2325 lbs
Time Since Last Inspection:	15 Hours	**Engines:**	1 Reciprocating
Airframe Total Time:	3652 Hours at time of accident	**Engine Manufacturer:**	Lycoming
ELT:	Installed, activated, aided in locating accident	**Engine Model/Series:**	O-320-E3D
Registered Owner:	Executive Flight Inc.	**Rated Power:**	150 hp
Operator:	Executive Flight Inc.	**Operating Certificate(s) Held:**	None

Meteorological Information and Flight Plan

Conditions at Accident Site:	Visual Conditions	**Condition of Light:**	Day
Observation Facility, Elevation:	SMP, 3830 ft msl	**Distance from Accident Site:**	6 Nautical Miles
Observation Time:	1156 PDT	**Direction from Accident Site:**	214°
Lowest Cloud Condition:		**Visibility**	10 Miles
Lowest Ceiling:	Broken / 2400 ft agl	**Visibility (RVR):**	
Wind Speed/Gusts:	4 knots /	**Turbulence Type Forecast/Actual:**	/
Wind Direction:		**Turbulence Severity Forecast/Actual:**	/
Altimeter Setting:	30.08 inches Hg	**Temperature/Dew Point:**	10°C / 4°C
Precipitation and Obscuration:			
Departure Point:	East Wentachee, WA (EAT)	**Type of Flight Plan Filed:**	None
Destination:	Seattle, WA (BFI)	**Type of Clearance:**	None
Departure Time:	1050 PDT	**Type of Airspace:**	Class G

Wreckage and Impact Information

Crew Injuries:	2 Serious	**Aircraft Damage:**	Substantial
Passenger Injuries:	N/A	**Aircraft Fire:**	None
Ground Injuries:	N/A	**Aircraft Explosion:**	None
Total Injuries:	2 Serious	**Latitude, Longitude:**	47.366667, -121.202222

Administrative Information

Investigator In Charge (IIC):	Debra J Eckrote	**Report Date:**	10/28/2004
Additional Participating Persons:	James P Black; FAA-FSDO; Spokane, WA Michael McClure; The New Piper Aircraft, Inc.; Arlington, TX Gregory Erikson; Lycoming; Wayne, IL		
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/.		