		NTSB ID: SEA04FA083B		Aircraft Registration Number: N3329S	
		Occurrence Date: 05/16/2004		Most Critical Injury: Fatal	
		Occurrence Type: Accident		Investigated By: NTSB	
Location/Time					
Nearest City/Place Tenino		State WA	Zip Code 98589	Local Time 2040	Time Zone PDT
Airport Proximity: Off Airport/Airstrip		Distance From Landing Facility:			
Aircraft Information Summary					
Aircraft Manufacturer Cessna		Model/Series 210J		Type of Aircraft Airplane	
Revenue Sightseeing Flight: No			Air Medical Transport Flight: No		
Narrative					
Brief narrative statement of facts, conditions and circumstances pertinent to the accident/incident:					
HISTORY OF FLIGHT					
<p>On May 16, 2004, approximately 2040 Pacific daylight time, a Cessna 170B high-wing airplane, N3510D, and a Cessna 210J high-wing airplane, N3329S, collided in flight approximately five nautical miles southeast of Tenino, Washington. The Cessna 170B had departed Roseburg, Oregon, at approximately 1834 and was en route to the Wax Orchards Airport, Vashon Island, Washington. The Cessna 210J departed Kelso, Washington, at an unspecified time and was en route to the Renton Municipal Airport, Renton, Washington. There was one occupant onboard each aircraft. The pilot of the Cessna 210J, a certificated commercial pilot, sustained fatal injuries, while the certificated private pilot of the Cessna 170B sustained minor injuries. Visual meteorological conditions prevailed and both aircraft were operated under 14 CFR Part 91 regulations.</p> <p>According to the Federal Aviation Administration (FAA), both pilots received weather briefings but neither pilot filed a flight plan, and neither aircraft had requested or were receiving air route traffic control radar services at the time of the collision.</p> <p>The pilot of the Cessna 170B reported that moments before the collision he was level at 3,500 feet mean sea level and had just changed his heading from 350 degrees to 318 degrees. The pilot stated, "I was looking down at my map as part of this 'normal scan' that I do when the collision occurred. I never saw the other airplane." The pilot further stated that the aircraft pitched down and went into an uncommanded left turn, requiring him to stabilize the angle of bank by holding full right aileron. The pilot reported that he then realized that the engine had come off the airplane, but he was still able to maintain a nose down attitude and keep his speed up. The pilot further reported that he then attempted to move the elevator and rudder enough to see if they were responsive, which they were. The pilot stated that as the airplane continued in the left turn through a southerly heading to an easterly heading, he saw what appeared to be parts of something falling out of the sky below him. The pilot said, "...that's when I thought I'd been hit by another airplane." The pilot reported that as he proceeded turning and losing altitude rapidly, he picked out a field where he thought he could land. The pilot further stated, "I moved the flap handle a little to see how much they moved, and when I saw they worked I decided to add some flap to reduce my speed as I approached the field." The pilot reported that he then applied right rudder to raise the left wing before "clipping" the tops of some trees and going through one powerline wire which bordered the field on the south. The pilot stated that after the airplane impacted the ground and nosed over, he immediately exited the aircraft and sought help at a nearby house. The aircraft came to rest inverted on a magnetic heading of 120 degrees, and there was no post impact fire.</p> <p>A witness, who is also a private pilot and the owner of the property where the Cessna 210J came to rest, reported that while in his house he heard an airplane flying around, prompting him to go outside to see what it was. The witness stated that he looked up and thought he heard airplanes</p>					
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Narrative (Continued)

overhead, then saw the two accident aircraft coming together. The witness further stated, "[I] saw them about 5 to 8 seconds before they hit. Both were straight and level. Neither took evasive action in any way." The witness stated that one airplane was heading north and the other one was heading northeast when he observed the collision. The witness further stated that after several airplane parts impacted the ground close to his house, he looked up again and saw "the silver aircraft" gliding north without an engine before it went out of sight over some trees.

The Cessna 170B came to rest in an open pasture with its engine located approximately one-half mile southwest of the main wreckage. The airplane's right cabin door and left lower cowling were located approximately three-quarters of a mile south of the main wreckage.

The Cessna 210J, which included the main cabin/cockpit area and engine, was located about one-quarter mile southwest of the Cessna 170B's main wreckage. The aircraft's wing was located approximately 400 feet south of the aircraft's main wreckage, while the airplane's tail section was discovered in a thick brush about one-half mile south of the main impact site.

PERSONNEL INFORMATION

The pilot of the Cessna 170B held a private pilot certificate with an airplane single-engine land rating. He also held a third-class medical certificate, issued on January 8, 2003, and had accumulated a total flight time of 282 hours, with 126 hours in make and model, and 23 hours in the last 90 days.

The pilot of the Cessna 210J held a commercial pilot certificate with airplane single and multiengine land ratings. He held a first-class medical certificate, issued on May 15, 2003, and had accumulated a total flight time of approximately 1,000 hours, with 5 hours logged in the previous 6 months.

AIRCRAFT INFORMATION

The 1955-model Cessna 170B, was a single-engine high wing all metal airplane featuring fixed conventional landing gear and a fixed pitch propeller. The airplane, serial number 27053, had accumulated a total time of 2,319 hours, with 34 hours since its last inspection. Maintenance records disclosed that the most recent annual inspection was completed on May 22, 2003. The airplane was equipped with a 150 horsepower Continental O-300 engine, with 913 hours since its last overhaul. The airplane was not painted, with the exception of one 8 inch light blue stripe running from the forward cowling to the end of the rudder along both sides of the airplane parallel to its longitudinal axis. Approximately 6 inches of each horizontal stabilizer tip was painted with a light blue color.

The 1969-model Cessna 210J, was a single-engine high wing all metal airplane featuring a retractable tricycle landing gear and a constant speed propeller. According to maintenance records, the Cessna 210J, serial number 21059129, had undergone its most recent annual inspection on March 4, 2002. At the time of the inspection records indicate the airplane had a total airframe time of 2,818 hours, with the engine having accumulated a total of 575 hours since its last overhaul. At the time of the accident the flight was operating in accordance with 14 CFR 91.203(b), Federal Aviation Administration Special Flight Permit, authorizing the flight to be flown from Grove Field (1W1), Camas, Washington, to the Renton Municipal Airport (RNT), Renton, Washington. The Special Flight Permit, issued on May 13, 2004, and valid until May 30, 2004, was for maintenance purposes. The airplane was painted white with alternating red and black stripes running the full length of the airplane on both sides, parallel to the longitudinal axis of the aircraft. Both wingtips were painted red. (See photograph #9 for Cessna 210J paint scheme)

METEOROLOGICAL INFORMATION

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Narrative (Continued)

The nearest weather reporting station was located at the Olympia Airport, Olympia, Washington, 14 nautical miles northwest of the accident site. At 2054, observation reported wind calm, visibility 10 statute miles, overcast clouds at 7,500 feet, temperature 15 degrees C, dew point 9 degrees C, and an altimeter setting of 30.00 inches of Mercury.

WRECKAGE AND IMPACT INFORMATION

Physical evidence as well as paint transfers were consistent with a mid-air collision. A red paint transfer signature, approximately 11 inches in length was observed on the left side of the Cessna 170B's top engine cowling, oriented approximately 30 degrees to the Cessna 170B's longitudinal axis from left to right, and from the rear towards the front. (See photographs #3 and #4) Red paint transfer signatures were also observed on the underside of the Cessna 170B's left wing strut through approximately 70 percent of its span. (See photographs #5 and #6) Two parallel blue paint transfer signature line marks were located on the Cessna 210's lower right side fuselage area, above and in the approximate location of the aircraft's lower rotating beacon and right main landing gear. The top line mark measured approximately 7 inches in length and was located about 1 inch below the longitudinal rivet line. The bottom line mark, approximately 6 3/4 inches in length, was measured about 5/16 of an inch below and parallel to the top line mark. Both line marks were oriented at an approximately 2-degree negative angle relative to the longitudinal rivet line when looking from the aft section of the airplane forward. Additional paint transfer signatures were observed in the same general area. (See photograph #8)

The Cessna 170B, with the exception of its engine, came to rest inverted in an open pasture at coordinates 46 degrees 47.67 minutes North latitude, 122 degrees 46.63 minutes West longitude on a measured heading of 120 degrees magnetic. The airplane's engine was located approximately 1,964 feet away from the main wreckage on a magnetic bearing of 207 degrees at 46 degrees 47.448 minutes North latitude, 122 degrees 46.981 minutes West longitude.

The cabin and cockpit areas remained intact. Examination of the cockpit area revealed the throttle was full in, carburetor heat full on, the mixture control was broken off, and the flap handle was in the down position, which equates to the Flaps Full Up position. The center section of the fuselage, approximately 5 feet aft of the cabin was bent upward at an angle of approximately 45 degrees. Flight control continuity was established to all control surfaces.

The right wing remained secured to the fuselage at all attach points. The wing's leading edge tip was crushed aft with the top inboard section of the wing wrinkled adjacent to the aft wing root area. The wing's aileron, flap and wing strut were not damaged.

The left wing remained attached to the fuselage and had sustained substantial damage. Examination revealed that its aileron and flap were secured at their respective wing attach points, but approximately 50 percent or more of each control surface was bent, twisted and mangled. The underside of the wing's support strut was bent upward approximately 70 degrees at its midpoint, and exhibited red paint transfer signatures through approximately 50 percent of its span.

The airplane's engine, which had separated from the aircraft, exhibited impact damage. All six cylinders and the exhaust system remained attached to the engine. The bottom front one-third of the oil sump was broken off. The left magneto was separated from the engine, while the right magneto remained attached. The firewall was bent and deformed on all four sides.

The propeller remained attached to the crankshaft. Blade #1 was bent aft approximately 90 degrees with gouging toward the outboard leading edge. The outboard 6 inches of blade # 2 was bent rearward approximately 30 degrees, and leading edge gouging was also noted at the mid-span region.

The pilot reported no anomalies with the airframe or engine prior to the midair collision.

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Narrative (Continued)

The Cessna 210J wreckage was scattered over a distance of approximately one-half mile throughout a densely wooded area, with a wreckage distribution path oriented on a magnetic heading of 010 degrees. The tail section, the first piece observed in the debris path, was located at coordinates 46 degrees 47.140 minutes North latitude, 122 degrees 47.050 minutes West longitude. The main wreckage, including the cabin and cockpit, was located at coordinates 46 degrees 47.541 minutes North latitude, 122 degrees 46.828 minutes West longitude. The airplane's engine, which separated during the collision, was located approximately 25 feet prior to the main wreckage and in line with the wreckage distribution path.

The tail section was separated from the airplane's aft bulkhead just below the rear window, and was located approximately 2,595 feet from the main wreckage on a magnetic heading of 183 degrees. The left horizontal stabilizer and elevator remained attached to the empennage. The outboard two-thirds of the right horizontal stabilizer was separated and missing, while the inboard one-third remained attached with leading edge crushing observed. The lower half of the rudder remained attached to the vertical stabilizer, while the rudder's upper half was separated and missing. The inboard one-third of the right elevator remained attached to the empennage, and the outboard two-thirds was separated and missing. The horizontal stabilizer's elevator trim tab was attached, with an up angle of approximately 15 degrees observed. The vertical stabilizer remained attached to the fuselage with approximately the top 18 inches bent and deformed.

The Cessna 210J's carrythrough wing was located in a densely forested area about 412 feet prior to the main wreckage area and approximately 45 feet to the right of the energy path. The wing came to rest in an inverted position perpendicular to the energy path. The right wing tip was bent and twisted with three metal wing support structures observed protruding from the wing tip area. An area of the wing's right leading edge at the mid-span region, approximately 5 feet long, was crushed aft about 3 feet. The left wing tip was not damaged. Both left and right cabin/cockpit area side structural supports remained attached to the wing.

The center section of the airplane, which included both main landing gear, was bent and twisted. Both main landing gear were observed to be in the retracted position.

The distance between the resting place of both airplane's main wreckage was approximately 1,131 feet. The magnetic heading from the Cessna 210J to the Cessna 170B was measured at 031 degrees magnetic.

(Refer to the attached wreckage diagram)

MEDICAL AND PATHOLOGICAL INFORMATION

A postmortem examination of the Cessna 210J pilot was conducted by the Thurston County Coroner's Office, Olympia, Washington. The cause of death was attributed to multiple blunt force injuries to head, neck and extremities. No causes which could be considered causal to the accident were reported. Toxicological testing was performed by the FAA's Civil Aeromedical Institute (CAMI) of Oklahoma City, Oklahoma, and all tests were negative.

TESTS AND RESEARCH

Radar data provided by the FAA revealed two targets on converging courses in the same airspace where witnesses observed the mid-air collision. At 2038:10 the data depicts one target partially superimposed over the second target. (See Attachment 1, RADAR DATA.)

The pilot of the Cessna 170B possessed a portable Global Positioning System Garmin GPSmap 196 unit, which he was using to navigate on the cross-country flight. The unit was secured by the NTSB investigator-in-charge (IIC) at the accident site and subsequently sent to Garmin for their assistance in downloading data pertinent to the investigation. Trackpoint data revealed that the

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Narrative (Continued)

flight departed Roseburg, Oregon, at approximately 1830, reaching its cruise altitude of 7,500 feet mean sea level (msl) at 1909. The flight proceeded on a magnetic heading of 350 degrees and started its descent out of 7,500 feet msl at 1938, leveling off at 3,500 feet msl at 2009 on a magnetic heading of 348 degrees. At 2034 the pilot initiated at descent out of 3,500 feet msl, concurrent with a left turn to magnetic heading of 318 degrees. At 2038:10 the airplane was at 3,005 feet msl on a magnetic heading of 322 degrees at 113 knots; however, at 2038:14 trackpoint data revealed the aircraft was on a magnetic heading of 243 degrees at an altitude of 3,017 feet msl, with an airspeed of 24 knots. The aircraft continued in a left turn, and 49 seconds later, at 2039:03, the aircraft was at 2,919 feet msl indicating 59 knots on a magnetic heading of 006 degrees. 5 seconds later, at 2039:08, the airplane had descended to 1,358 feet on a magnetic heading of 278 degrees and an airspeed of 141 knots. Data revealed that at 2039:10 the airplane had turned back to the right to a magnetic heading of 325 degrees and was at an altitude of 1,303 feet msl. At 2039:34, the last trackpoint data indicated the airplane was 888 feet msl at 68 knots on a magnetic heading of 005 degrees. (Refer to Attachment 2, Cessna 170B Garmin GPS data)

ADDITIONAL INFORMATION

Both aircraft were released by the NTSB to Mr. Jeff Poschwatta, Managing Member, AvTech Services, LLC, of Kent, Washington, on June 2, 2004.

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		Occurrence Type: Accident			
Landing Facility/Approach Information					
Airport Name	Airport ID:	Airport Elevation Ft. MSL	Runway Used NA	Runway Length	Runway Width
Runway Surface Type:					
Runway Surface Condition:					
Approach/Arrival Flown: NONE					
VFR Approach/Landing: None					
Aircraft Information					
Aircraft Manufacturer Cessna		Model/Series 210J		Serial Number 21059129	
Airworthiness Certificate(s): Normal					
Landing Gear Type: Retractable - Tricycle					
Amateur Built Acft? No		Number of Seats: 6		Certified Max Gross Wt. 3400 LBS	
Number of Engines: 1		Engine Type: Reciprocating		Engine Manufacturer: Continental	
Model/Series: IO-520		Rated Power: 285 HP			
- Aircraft Inspection Information					
Type of Last Inspection Annual		Date of Last Inspection 03/2002		Time Since Last Inspection Hours	
Airframe Total Time Hours					
- Emergency Locator Transmitter (ELT) Information					
ELT Installed?/Type Yes /		ELT Operated? No		ELT Aided in Locating Accident Site? No	
Owner/Operator Information					
Registered Aircraft Owner Barbara A. Eichman		Street Address			
		City Arvada		State CO	
		Zip Code 80004			
Operator of Aircraft Scott C. Devlin		Street Address			
		City Camas		State WA	
		Zip Code 98607			
Operator Does Business As:				Operator Designator Code:	
- Type of U.S. Certificate(s) Held: None					
Air Carrier Operating Certificate(s):					
Operating Certificate:			Operator Certificate:		
Regulation Flight Conducted Under: Part 91: General Aviation					
Type of Flight Operation Conducted: Positioning					

 <p>National Transportation Safety Board FACTUAL REPORT AVIATION</p>	NTSB ID: SEA04FA083B
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	Occurrence Type: Accident

First Pilot Information

Name On File	City On File	State On File	Date of Birth On File	Age 33
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Sex: M	Seat Occupied: Left	Occupational Pilot? Aircraft Mechanic	Certificate Number: On File
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Certificate(s): Commercial

Airplane Rating(s): Multi-engine Land; Single-engine Land

Rotorcraft/Glider/LTA: None

Instrument Rating(s): None

Instructor Rating(s): None

Current Biennial Flight Review?

Medical Cert.: Class 1	Medical Cert. Status: Valid Medical--no waivers/lim.	Date of Last Medical Exam: 05/2003
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- Flight Time Matrix	All A/C	This Make and Model	Airplane Single Engine	Airplane Multi-Engine	Night	Instrument		Rotorcraft	Glider	Lighter Than Air
						Actual	Simulated			
Total Time	1000									
Pilot In Command(PIC)										
Instructor										
Instruction Received										
Last 90 Days										
Last 30 Days										
Last 24 Hours										

Seatbelt Used?	Shoulder Harness Used?	Toxicology Performed? Yes	Second Pilot? No
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Flight Plan/Itinerary

Type of Flight Plan Filed: None

Departure Point Camas	State WA	Airport Identifier 1W1	Departure Time 1930	Time Zone PDT
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Destination Everett	State WA	Airport Identifier PAE	
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Type of Clearance: None

Type of Airspace: Class E

Weather Information

Source of Wx Information:

National Weather Service

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	Occurrence Type: Accident

Weather Information

WOF ID	Observation Time	Time Zone	WOF Elevation	WOF Distance From Accident Site	Direction From Accident Site
OLM	2054	PDT	213 Ft. MSL	14 NM	318 Deg. Mag.
Sky/Lowest Cloud Condition:				Ft. AGL	Condition of Light: Day
Lowest Ceiling: Overcast			7150 Ft. AGL	Visibility: 10 SM	Altimeter: 30.00 "Hg
Temperature: 15 °C	Dew Point: 9 °C	Weather Conditions at Accident Site: Visual Conditions			
Wind Direction:	Wind Speed: Calm		Wind Gusts:		
Visibility (RVR): Ft.	Visibility (RVV) SM				
Precip and/or Obscuration:					

Accident Information

Aircraft Damage: Destroyed	Aircraft Fire: None	Aircraft Explosion: None
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- Injury Summary Matrix	Fatal	Serious	Minor	None	TOTAL
First Pilot	1				1
Second Pilot					
Student Pilot					
Flight Instructor					
Check Pilot					
Flight Engineer					
Cabin Attendants					
Other Crew					
Passengers					
- TOTAL ABOARD -	1				1
Other Ground					
- GRAND TOTAL -	1				1

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Occurrence Date: 05/16/2004

Occurrence Type: Accident

Administrative Information

Investigator-In-Charge (IIC)

Thomas M. Little

Additional Persons Participating in This Accident/Incident Investigation:

Kevin McKee
Federal Aviation Administration
Renton, WA