
		NTSB ID: SEA03FA106		Aircraft Registration Number: N6723K	
		Occurrence Date: 06/16/2003		Most Critical Injury: Fatal	
		Occurrence Type: Accident		Investigated By: NTSB	
Location/Time					
Nearest City/Place Yelm	State WA	Zip Code 98597	Local Time 1830	Time Zone PDT	
Airport Proximity: Off Airport/Airstrip		Distance From Landing Facility: 0.25			
Aircraft Information Summary					
Aircraft Manufacturer Downer		Model/Series RC-3		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 June 16, 2003, approximately 1830 Pacific daylight time, a Downer RC-3 "SeaBee" amphibious aircraft, N6723K, recently purchased and being operated by an airline transport pilot, was destroyed after impacting trees following a takeoff run at Western Airpark (92W) near Yelm, Washington. The left seat pilot-rated passenger received serious injuries, while the right seat airline transport pilot sustained fatal injuries. Visual meteorological conditions existed, and no flight plan had been filed. The flight, which was personal, was to have been operated under 14 CFR Part 91. The flight was originating at the time of the accident.</p> <p>As reported on the Pilot/Operator Aircraft Accident Report (NTSB Form 6120.1/2), and in an interview with the NTSB investigator-in-charge (IIC), a senior NTSB investigator, and an FAA inspector, the passenger reported that he had just purchased the aircraft on the morning of the accident, and to the best of his knowledge it had not flown in a couple of years. The passenger stated that he and the right seat first pilot had agreed that the first pilot would do the flying during the repositioning flight to the first pilot's home base. The passenger further stated that while he was helping load airplane parts into a van, the first pilot was looking the airplane over, and that when he tried to start the engine, "...it started right up the first time." The passenger reported that he and the first pilot checked the fuel level and it was between 35 and 40 gallons, and that the first pilot also checked the fuel visually with a dipstick and a container. The passenger stated that the first pilot ran the engine a second time, checked the magnetos and let it warm up. The passenger recounted that the first pilot cycled the propeller a number of times and thought he tried reverse, but wasn't "totally" certain about this. The passenger reported that he didn't remember if the first pilot had done a full power run-up on the engine, or whether he had set the parking brake. The passenger stated that he taxied the airplane for departure, but he could not remember if the parking brake was on or off prior to taxiing, and that he didn't remember the airplane pulling to the left or right while taxiing, or the brake "grabbing" or "binding up." The passenger continued by saying that when he approached the end of the runway he made a wide right turn to line up with the runway, but overshot the centerline and had to make a 360 degree turn to get lined up. The passenger stated that during this time frame he sensed the first pilot was in a hurry to get home, as indicated by the first pilot's reactions to him for overshooting the centerline and taking too much time to get the airplane lined up for takeoff. The passenger further stated that when he did get aligned with the runway the first pilot took the controls and advanced the throttle, but that he wasn't sure if he advanced the throttle to the full forward position or not. The passenger also related that after the throttle was advanced he didn't feel like the airplane was accelerating properly. "I asked [the first pilot] if the airplane was accelerating properly and he said 'Yes.'" During the acceleration I noticed a reading of 50 miles per hour (mph) on the airspeed indicator, but did not sense a continuous acceleration. I asked [the first pilot] if the power settings were proper and he replied 'Yes.'" The passenger reported that as the takeoff roll continued and the end of the runway was approaching, he again did not</p>					
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Narrative (Continued)

sense the airplane accelerating, that he thought 65 mph or 70 mph was flying speed, and that they might have been a little over 50 mph and not accelerating. The passenger stated, "I then asked him [the first pilot], 'You want me to put some flaps out?'" and his response was 'No.' A moment later the airplane went off the end of the runway down into a ravine. It never flew. I do not know why the airplane failed to obtain flying speed, nor do I know why [the first pilot] continued the takeoff when it seemed to me that something was wrong. I did not notice any malfunctions during the takeoff run that would explain the aircraft's failure to accelerate properly." The passenger said he thought the first pilot had one hand on the throttle and one hand on the yoke, but he didn't notice if he was making any power adjustments. The passenger said he didn't observe any tach reading, that his feet were flat on the floor, his hands were in his lap, and the airplane appeared to be tracking normally on takeoff. The passenger also stated that he didn't think the first pilot had become incapacitated and that there was no departure briefing.


Six witnesses who live on the airport from where the airplane was departing furnished the NTSB investigator-in-charge with written statements.

Witness #1, a retired commercial airline pilot, reported observing the aircraft taxi to the west end of the runway, do a run-up, and depart. The witness stated that about 1,400 feet from the west end of the airport the airplane appeared to be traveling about 45 mph to 50 mph. "I continued to observe the aircraft and it did not appear to accelerate any more, but continued with what appeared to be max [maximum] power. I do not recall any roughness in the engine as it passed my point. The aircraft continued the takeoff roll but did not appear to be accelerating. I was waiting to see an abort, but the aircraft continued to the end of the runway and then traveled on another 100 feet of grass overrun before dropping down a very steep embankment. At that point the engine noise stopped."

Witness #2, a retired commercial airline pilot, reported observing the aircraft from in front of his house, which is located midway down the 2,800-foot runway. The witness stated the aircraft was in front of a hangar with the engine running at low power, approximately 1,500 rpm. "The engine sounded normal to me at that time, although I didn't focus on it." The witness further stated that he observed the airplane taxi to the west end of the runway for run-up, but since he could only see the middle one-third of the runway from his house, he couldn't see the aircraft during the run-up, or hear what the engine sounded like. "Later we heard the aircraft power up for takeoff. As the aircraft passed the mid-point of the runway, I estimate its speed at 45-50 mph, and the engine sounded terrible. It was either mis-firing or it had stuck valves, because it was missing pretty badly. I remember thinking that this must be a full power run during high speed taxi and that the pilot would certainly abort, but as he disappeared past my neighbor's hangar to the east, I realized that he was continuing the takeoff." The witness reported that he did not see the departure of the aircraft off the east end of the runway.

Witness #3, an airline transport pilot and licensed airframe and power plant mechanic, said he was familiar with the normal engine sounds peculiar to the geared engine installed in the accident aircraft. The witness reported that he had an unobstructed view from the yard of his house from the time it taxied out to the time it disappeared from view off of the eastern end of runway 9. The witness stated that at the time the airplane was doing a run-up in the vicinity of the hangar, he did not notice any unusual engine sounds. "The aircraft taxied by within a hundred feet of our location and the engine sounds were normal at that time. I watched the aircraft go by my position and did not visually notice anything unusual." The witness reported the aircraft proceeded to the west end of runway 9, into the paved turnaround area, and stopped for a short time prior to beginning its takeoff roll, with no further run-up conducted at the runway. The witness further stated that as the airplane started its takeoff roll down the runway, he noticed that the engine did not seem to be producing full power, and was not running smoothly "at that high power setting."

The witness also related that there was no surging from the propeller, and that the sounds he heard were consistent with a carburetion problem. The witness reported, "The aircraft did not appear to accelerate normally, and my initial thought was that the pilot was doing high speed taxi

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testing, although it appeared that the flaps were at least partially extended. The witness said the tailwheel rose clear of the runway and the aircraft continued in a nose high attitude the full length of the runway before going over an embankment where it disappeared from view. The witness reported the power was never reduced and the main wheels never appeared to leave the pavement until the aircraft ran off the end of the runway.

Witness #4, a corporate pilot who resides on the airport, reported observing the airplane coming down the runway [on its takeoff roll] going slow, "making noises," and the tail not leaving the ground. The witness stated, "It looked like it was traveling about 40 mph. I could not see it past the condo hangars, as they blocked my view. It did not get airborne to the east."

Witness #5, a corporate pilot who resides on the airport, reported the he could clearly see the entire runway, with the exception of the departure end of runway 09. The witness stated that he noticed the airplane pass by his house as it was taxiing to runway 09 and nothing unusual was noted. The witness further stated, "...[I] observed the Seabee rolling down the runway on centerline. However, the engine didn't sound right. It wasn't extremely obvious though what it was. Something like the tone changing just enough to indicate to me that it wasn't developing full power. I then observed the airplane passing me at midfield, that it was traveling at approximately half speed that I considered necessary (approx 30 - 40 mph)." The witness stated that he continued to watch, and at two-thirds down the runway there was no evidence of the aircraft gaining any more airspeed. The witness related that he then said to himself, "He's going way too slow. He must be doing a test down the runway." The witness said he did not know what the flap position was and did not observe the Seabee going off the end of the runway, as his view was obstructed.

Witness #6, who was retired and lived on the airport, reported observing the aircraft start up and taxi out and then reappear going east on the runway at approximately 40 mph. "I could only see the mid-point of the runway. The engine sounded 'different', like no prop [propeller] noise or strain."

PERSONNEL INFORMATION


The passenger/owner of the aircraft was a retired commercial airline pilot. In an interview with the IIC, the passenger stated that he and the right seat first pilot had agreed that he [the passenger] would occupy the left seat, and that the only time he manipulated the controls was during the taxi out for takeoff. The passenger further stated that he and the first pilot, who occupied the right seat, had previously discussed who would fly the aircraft to the destination airport, and it had been agreed upon that "the first pilot would do the flying."

The first pilot, who occupied the right seat, was a retired commercial airline pilot and possessed an airline transport pilot certificate with a multiengine land rating for airplanes, and a commercial license with ratings for single-engine land and single-engine sea airplanes. The pilot reported on his most recent airman medical certificate application, a total flight time of 15,000 hours, with 40 hours flown in the last 6 months. The pilot was issued a second class medical certificate on October 8, 2002, with the limitation that he "must wear corrective lenses".

AIRCRAFT INFORMATION

The RC-3 "SeaBee" was manufactured in 1947 as serial number 1006. According to the aircraft logbooks, the aircraft had a total of 1,851.3 hours of flight time at the last annual inspection, which was conducted on August 20, 2002. The aircraft was purchased on the day of the accident by the left seat pilot rated passenger. Aircraft engine logbooks indicated that on August 6, 2002, the Lycoming GO-435-C2B2 engine had a total time of 585.50 hours since its most recent overhaul.

METEOROLOGICAL INFORMATION

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The 1854 weather observation (ASOS) at Olympia, Washington, 15 miles west of the accident site, reported wind 010 degrees at 6 knots, visibility 10 statute miles, clear skies, temperature 26 degrees Celsius, dew point 7 degrees Celsius and an altimeter setting of 30.04 inches of Mercury.

WRECKAGE AND IMPACT INFORMATION

Approximately 66 feet of a grass overrun extends beyond the departure end of runway 09. The beginning of the wreckage path was identified by evidence of a collision with an approximate 60-foot high tree located down the embankment beyond the overrun area. The tree was approximately 200 feet and 10 degrees left of the extended centerline of the departure end of runway 09. Additional tree damage was noted further down the embankment for another approximately 400 feet leading up to the wreckage. The embankment was covered with thick brush and trees measuring 40 to 60 feet high. The slope of the embankment was estimated to be 60 degrees.

The aircraft came to rest in an inverted position at the bottom of a ravine with its nose and left wing partially submerged in an adjacent canal that borders the edge of the ravine. The accident site was approximately 600 feet from the departure end of runway 09, on a magnetic heading of 001 degrees and at an elevation of 352 feet MSL. The accident site coordinates were 46 degrees 55.41 minutes north latitude and 122 degrees 32.83 minutes west longitude.

On July 23, 2003, the aircraft was recovered by helicopter from the crash site and transported to an aircraft maintenance facility located at the departure airport. Examination of the airframe revealed the forward portion of the fuselage, incorporating the cabin and cockpit area, was crushed aft and upward. The cockpit was substantially deformed, including both left and right pilot seats.

Both landing gear were in the extended position. Flight control continuity was confirmed from all control surfaces to the cockpit.

The left wing remained attached to the fuselage. Approximately the outboard two-thirds was not damaged, while the inboard one-third of the leading edge sustained impact damage. The first 5 feet of the wing from the wing root outboard exhibited leading edge aft crushing, while the next three foot outboard section exhibited a circular indentation approximately 20 inches deep with wood fibers present in the indentation. The outboard 5 feet of the left wing's trailing edge was bent and twisted. The left aileron remained attached to the left wing, was in the neutral position, and was not damaged. The outboard 4 1/2 feet of the left flap was lightly wrinkled, while the inboard half of the flap was bent and twisted. The flap remained attached to the left wing and in the neutral position. The left pontoon remained attached to the wing and was not damaged. The left wing strut was separated from the wing at the upper attach point and was impact damaged approximately 2 feet inboard from the upper attach point.

The forward half of the right wing was separated from the wing root. A 36 inch by 18 inch rectangular section of the wing skin, located 3 1/2 feet inboard from the wingtip, was cut through and missing. A longitudinal rivet separation existed 6 feet outboard of the leading edge wing root extending aft 18 inches. The outboard 7 feet of the leading edge of the wing was crushed aft due to impact damage. The wing tip was separated and exhibited minor damage. The right wing strut was separated at the upper wing attach point and the inboard 6 feet of the wing was destroyed. The right aileron remained attached to the wing, while the aileron's trailing edge at the mid-span point was bent and twisted. The aileron was in the neutral position. The right flap was split into two pieces at the mid-span point and remained attached to the wing at all three attach points.

The right flap was found extended to the 45 degree position. The right pontoon had separated from the wing and was located 10 feet north of the cockpit at the accident site.

The fuselage, aft of the cabin area and at the mid-point to the tail section, was bent to the left approximately 45 degrees. The right horizontal stabilizer and right elevator remained attached to the empennage and were not damaged. The right elevator remained attached to the right stabilizer at all attached points, and the elevator trim tab was in the neutral position. The left horizontal

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stabilizer had separated from the empennage and was found laying inverted 18 inches to the right of and slightly behind the left wingtip at the accident site when looking toward the front of the aircraft from the tail section.

The left elevator remained partially attached to the empennage at its aft attach point. It exhibited impact damage, was twisted, wrinkled and bent, and has a 4 inch by 2 inch leading edge opening approximately 16 inches inboard from its outer tip. The elevator's trim tab was in the neutral position.

The three-bladed constant-speed-reversible-pitch propeller remained attached at the crankshaft flange. There was no spinner assembly attached to the propeller. The propeller blades remained attached to the propeller hub. The propeller blade tips exhibited moderate leading edge damage consisting of gouging, torsional twisting and chordwise striations across the cambered surface. Blade "B" had rotated clockwise about 30 degrees toward the high pitch position. The propeller governor was securely attached at the mounting pad with the pitch control mechanism securely attached at the control arm and respective components.

MEDICAL AND PATHOLOGICAL INFORMATION

Postmortem examination of the first pilot, who was seated in the right seat, was performed by the Thurston County Coroner's Office, Olympia, Washington, on June 17, 2003. The cause of the pilot's death was determined to be from multiple blunt force injuries to the chest and positional asphyxia.


Aviation toxicological testing was performed by the FAA Civil Aero medical Institute (CAMI) at Oklahoma City, Oklahoma. Results of this examination indicated that no carbon monoxide or cyanide detected in Blood, no ethanol detected in Vitreous, and 0.077 (ug/ml, ug/g) Chlorpheniramine detected in Blood. Chlorpheniramine is an antihistamine used to relieve allergic rhinitis (seasonal allergy) symptoms including sneezing, runny nose, itching, and watery eyes.

TEST AND RESEARCH

On July 23, 2003, the IIC supervised an examination of the engine by a Textron Lycoming representative. Additionally, On November 23, 2003, the IIC supervised a disassembly inspection of the engine conducted by the same Textron Lycoming representative who conducted the initial examination. The crankshaft rotated freely by hand in both directions. Thumb compression was observed in proper order on all six cylinders. The complete valve train was observed to operate in proper order and lift action was observed at each rocker assembly. Mechanical continuity was established throughout the rotating group, valve train and accessory section during hand rotation of the crankshaft. The spark plugs were secure at each position with their respective spark plug lead attached. The bottom and top spark plugs were removed and examined. The spark plug electrodes were undamaged and displayed varying coloration. The oil soaking of the spark plugs was attributed to the airplane being in an inverted position for approximately one month, as a result of the delay in the recovery process.

The IIC and a Senior NTSB investigator examined the aircraft's braking system, which incorporates toe brakes only on the left side. The examination revealed that the parking brake valve was found in the "ON" position, the right wheel brake was on, and the left brake was flat [off] as it was low on fluid due to a ruptured hydraulic line. The right brake released when fluid pressure was released from the system. There was an aft deformation in the instrument panel in the area of the parking brake. The right wheel was found in the locked-in position by the brake pad. There were clear scalloping signature marks consistent with the contour of the brake pads on the right wheel. The left wheel had a faint outline matching the shape of the brake pad structure. There were no elongated skid marks found on the runway or off the end of the runway into the overrun area.

The IIC supervised the bench flow testing and teardown of the aircraft's carburetor, model PS-5BD,

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P/N 391486-10, S/N 788385, at the facilities of Precision Engines, Everett, Washington. Both tests revealed no anomalies with the carburetor which would have precluded normal operation of the component.


The IIC also supervised the testing of both of the airplane's magnetos and the ignition harness at the facilities of Galvin Flying Service, Seattle, Washington. Testing involved performing functional and operational tests on magneto P/N 10-51365-31, S/N 479171 and magneto P/N 10-51365-32, S/N 511439. Both units performed to specifications as outlined in the service manual for coming in speed and operation speed. The magneto harness was also tested with a high tension tester. No defects were noted in the harness test or in the magneto test.

A Federal Aviation Administration Aviation Safety Inspector from the Flight Standards District Office, Cincinnati, Ohio, supervised the teardown and examination of the propeller at the facilities of Hartzell Propeller Inc. Results of the examination revealed that while the power output of the propeller could not be determined, the propeller was rotating at the time of impact. There were no discrepancies with the propeller that would preclude a normal takeoff.

ADDITIONAL INFORMATION

The aircraft wreckage was released to the owner of the aircraft on November 13, 2003.

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Landing Facility/Approach Information					
Airport Name	Airport ID:	Airport Elevation	Runway Used	Runway Length	Runway Width
Western Airpark	92W	390 Ft. MSL	09	2846	30
Runway Surface Type: Asphalt					
Runway Surface Condition: Dry					
Approach/Arrival Flown: NONE					
VFR Approach/Landing: None					
Aircraft Information					
Aircraft Manufacturer		Model/Series		Serial Number	
Downer		RC-3		1006	
Airworthiness Certificate(s): Normal					
Landing Gear Type: Amphibian					
Amateur Built Acft? No	Number of Seats: 4	Certified Max Gross Wt.	2980 LBS	Number of Engines: 1	
Engine Type:	Engine Manufacturer:	Model/Series:	Rated Power:		
Reciprocating	Lycoming	GO-435-C2B2	245 HP		
- Aircraft Inspection Information					
Type of Last Inspection	Date of Last Inspection	Time Since Last Inspection	Airframe Total Time		
Annual	08/2002	0 Hours	1851.3 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		Street Address			
Douglas K. Gentzkow		City	State	Zip Code	
		Redmond	WA	98053	
Operator of Aircraft		Street Address			
Douglas K. Gentzkow		City	State	Zip Code	
		Redmond	WA	98053	
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					

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First Pilot Information

Name On File	City On File	State On File	Date of Birth On File	Age 71
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Sex: M	Seat Occupied: Right	Occupational Pilot? Retired	Certificate Number: On File
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Certificate(s): Airline Transport; Commercial; Flight Engineer

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

Rotorcraft/Glider/LTA: None

Instrument Rating(s): Airplane

Instructor Rating(s): None

Current Biennial Flight Review?

Medical Cert.: Class 2	Medical Cert. Status: Valid Medical--no waivers/lim.	Date of Last Medical Exam: 10/2002
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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	15000									
Pilot In Command(PIC)										
Instructor										
Instruction Received										
Last 90 Days										
Last 30 Days										
Last 24 Hours										

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

Type of Flight Plan Filed: None

Departure Point Yelm	State WA	Airport Identifier 92W	Departure Time 1830	Time Zone PDT
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Destination Kent	State WA	Airport Identifier S36	
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Type of Clearance: None

Type of Airspace: Class G

Weather Information

Source of Wx Information:

No record of briefing

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Weather Information					
WOF ID	Observation Time	Time Zone	WOF Elevation	WOF Distance From Accident Site	Direction From Accident Site
OLM	1854	PDT	206 Ft. MSL	15 NM	262 Deg. Mag.
Sky/Lowest Cloud Condition: Clear			Ft. AGL	Condition of Light: Day	
Lowest Ceiling: None		Ft. AGL	Visibility: 10	SM	Altimeter: 30.04 "Hg
Temperature: 26 °C	Dew Point: 7 °C	Weather Conditions at Accident Site: Visual Conditions			
Wind Direction: 10		Wind Speed: 6	Wind Gusts:		
Visibility (RVR):	Ft.	Visibility (RVV)	SM		
Precip and/or Obscuration:					

Accident Information		
Aircraft Damage: Destroyed	Aircraft Fire: None	Aircraft Explosion: None

- 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		1			1
- TOTAL ABOARD -	1	1			2
Other Ground					
- GRAND TOTAL -	1	1			2

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Administrative Information

Investigator-In-Charge (IIC)

Thomas M. Little

Additional Persons Participating in This Accident/Incident Investigation:

Kevin McKee
Federal Aviation Administration
Renton, WA

Mark W Platt
Lycoming
Van Nuys, CA