
		NTSB ID: SEA01LA067		Aircraft Registration Number: N6295K	
		Occurrence Date: 03/23/2001		Most Critical Injury: None	
		Occurrence Type: Accident		Investigated By: NTSB	
Location/Time					
Nearest City/Place Carr Inlet		State WA	Zip Code 98335	Local Time 1115	Time Zone PST
Airport Proximity: Off Airport/Airstrip		Distance From Landing Facility: 5			
Aircraft Information Summary					
Aircraft Manufacturer Republic		Model/Series RC-3		Type of Aircraft Airplane	
Revenue Sightseeing Flight: No			Air Medical Transport Flight: No		
Narrative					
<p>Brief narrative statement of facts, conditions and circumstances pertinent to the accident/incident:</p> <p>On March 23, 2001, about 1115 Pacific standard time, a Republic RC-3 (Seabee), N6295K, sustained substantial damage subsequent to the separation of the propeller while in cruise flight approximately 5 statute miles west of Tacoma Narrows Airport, Gig Harbor, Washington. The airplane is owned by the pilot, and was being operated as a personal/pleasure flight under the provisions of Title 14, CFR Part 91, when the accident occurred. The commercial pilot, the sole occupant of the airplane, was not injured. Visual meteorological conditions prevailed and no flight plan had been filed. The flight originated from Mason Lake, Washington, approximately 5 minutes prior to the accident. The airplanes intended destination was Tacoma Narrows Airport, Gig Harbor, Washington.</p> <p>In a telephone conversation with the NTSB, the pilot stated that the airplane was in a cruise flight configuration at 1,500 feet mean sea level (msl) when he observed an engine over speed condition. The pilot reduced engine RPM and executed a forced water landing near Carr Inlet.</p> <p>Post-accident inspection of the airplane disclosed that the airplane's propeller had separated from the crankshaft flange. The remnants of three propeller bolts were recovered; however, the propeller assembly was not recovered.</p> <p>The recovered pieces of propeller bolts were submitted to the NTSB Materials Laboratory in Washington, D.C. for metallurgical examination. The Materials Laboratory's factual report (Report No. 01-076, attached) noted that fractures in the bolts were found in two locations, adjacent to the underside of the head and through the shank of the bolt. All head fractures were noted to be 0.5 inch from the end of the bolt head. The shank fractures in the two recovered bolt shank sections were noted to be 1.0 and 1.1 inches from the end of the head, respectively.</p> <p>The fractures adjacent to the heads of the three bolts were similar in appearance, taking place on planes that initiated at opposite sides of the bolt and were oriented at a slight angle towards the bolt head. Each head fracture contain two smooth areas emanating from diametrically opposite surfaces, which met at a rough area in the interior of the bolt cross-section (typical of fatigue cracking followed by unstable crack propagation due to overstress directly before complete fracture.) In all three of the head fractures, about 80% of the fracture surface was found to be characterized by fatigue. Scanning electron microscope (SEM) examination of the head fracture surfaces disclosed that fatigue cracks initiated in multiple points on diametrically opposite sides of the bolt and propagated inwards.</p> <p>Examination of the shank fractures also disclosed features consistent with a fatigue cracking fracture mode followed by final fracture due to tensile overstress. As with the head fractures, the primary features of the shank fractures included a smooth (fatigue) area through approximately 80% of the fracture surface, with fatigue cracks originating from multiple locations on diametrically opposite sides of the bolt and propagating towards the interior of the cross-section. SEM examination of the shank fractures additionally detected micro-fissures typically seen in high</p>					
FACTUAL REPORT - AVIATION					
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Narrative (Continued)

stress fatigue cracking in steel alloys.

Examination of the threads on the sides of the recovered shank pieces were flattened. In each case, approximately 4 threads were flattened over a length of about 0.2 inch.

Aircraft maintenance records indicate that the aircraft's propeller was removed and replaced 2.8 flight hours prior to the accident. The propeller was removed in order to comply with AD (Airworthiness Directive) 97-18-02.

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<b>Landing Facility/Approach Information</b>					
Airport Name	Airport ID:	Airport Elevation	Runway Used	Runway Length	Runway Width
Tacoma Narrows	TIW	292 Ft. MSL			
Runway Surface Type: Unknown					
Runway Surface Condition: Water--calm					
Approach/Arrival Flown: Unknown					
VFR Approach/Landing: Forced Landing					
<b>Aircraft Information</b>					
Aircraft Manufacturer		Model/Series		Serial Number	
Republic		RC-3		508	
Airworthiness Certificate(s): Normal					
Landing Gear Type: Retractable - Amphibian; Hull; Tricycle					
Amateur Built Acft? No	Number of Seats: 4	Certified Max Gross Wt.	3150 LBS	Number of Engines: 1	
Engine Type:	Engine Manufacturer:	Model/Series:	Rated Power:		
Reciprocating	Lycoming	GO-480	300 HP		
- Aircraft Inspection Information					
Type of Last Inspection	Date of Last Inspection	Time Since Last Inspection	Airframe Total Time		
Annual	05/2000	3 Hours	Hours		
- Emergency Locator Transmitter (ELT) Information					
ELT Installed?/Type Yes /	ELT Operated? No	ELT Aided in Locating Accident Site? No			
<b>Owner/Operator Information</b>					
Registered Aircraft Owner		Street Address			
William B. Blackett		4366 North Lexington			
		City	State	Zip Code	
		Tacoma	WA	98407	
Operator of Aircraft		Street Address			
William B. Blackett		4366 North Lexington			
		City	State	Zip Code	
		Tacoma	WA	98407	
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: Personal					

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**First Pilot Information**

Name On File	City On File	State On File	Date of Birth On File	Age 67
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Sex: M	Seat Occupied: Left	Occupational Pilot? Doctor/Dentist	Certificate Number: On File
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Certificate(s): Commercial

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

Rotorcraft/Glider/LTA: None

Instrument Rating(s): Airplane

Instructor Rating(s): Airplane Single-engine

Current Biennial Flight Review? 05/1999

Medical Cert.: Class 3	Medical Cert. Status: Valid Medical--no waivers/lim.	Date of Last Medical Exam: 04/1999
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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	680	200	477	203	20	57	54			
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? No	Second Pilot? No
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**Flight Plan/Itinerary**

Type of Flight Plan Filed: None

Departure Point Mason Lake	State WA	Airport Identifier	Departure Time 1110	Time Zone PST
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Destination TACOMA	State WA	Airport Identifier TIW	
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Type of Clearance: None

Type of Airspace: Class D

**Weather Information**

Source of Wx Information:

Unknown


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<b>Weather Information</b>					
WOF ID	Observation Time	Time Zone	WOF Elevation	WOF Distance From Accident Site	Direction From Accident Site
TIW	1053	PST	293 Ft. MSL	4 NM	263 Deg. Mag.
Sky/Lowest Cloud Condition: Clear			Ft. AGL	Condition of Light: Day	
Lowest Ceiling: None		Ft. AGL	Visibility: 10	SM	Altimeter: 30.06 "Hg
Temperature: 10 °C	Dew Point: 4 °C	Weather Conditions at Accident Site: Visual Conditions			
Wind Direction: 338	Wind Speed: 6	Wind Gusts:			
Visibility (RVR): Ft.	Visibility (RVV) SM				
Precip and/or Obscuration:					

<b>Accident Information</b>		
Aircraft Damage: Substantial	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					
- TOTAL ABOARD -				1	1
Other Ground					
- GRAND TOTAL -				1	1

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 National Transportation Safety Board <b>FACTUAL REPORT</b> AVIATION	NTSB ID: SEA01LA067	
	Occurrence Date: 03/23/2001	
	Occurrence Type: Accident	

Administrative Information

Investigator-In-Charge (IIC)

Dennis J. Hogenson

Additional Persons Participating in This Accident/Incident Investigation:

William J Reichardt  
FAA - FSDO  
Seattle, WA