



# National Transportation Safety Board Aviation Accident Final Report

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<b>Location:</b>	Astoria, OR	<b>Accident Number:</b>	WPR09LA219
<b>Date &amp; Time:</b>	04/24/2009, 1645 PDT	<b>Registration:</b>	N653SB
<b>Aircraft:</b>	ELLUMAX LEASING LLC EPIC LT	<b>Aircraft Damage:</b>	Substantial
<b>Defining Event:</b>	Loss of engine power (partial)	<b>Injuries:</b>	2 None
<b>Flight Conducted Under:</b>	Part 91: General Aviation - Personal		

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## Analysis

During a climb to en route cruise, the airplane's engine lost almost all power, and the pilot had to ditch in a river because he was unable to glide back to the departure airport. The power loss was due to a minimum fuel flow command from the fuel control unit as a result of the seizure of the fuel control flyweights. The seizure of the flyweights was due to their contamination with residue from a failed fuel control tachometer drive bearing. The bearing failed due to its preload spacer being machined incorrectly, and due to the failure of the assembling technician to detect the anomaly at the time the fuel control was assembled.

## Probable Cause and Findings

The National Transportation Safety Board determines the probable cause(s) of this accident to be: The partial loss of engine power during climb to cruise due to the failure of the engine's fuel control unit. Contributing to the accident was the incorrect machining of an internal component of the fuel control unit, and the failure of the assembling technician to correctly inspect the unit's assembly.

## Findings

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<b>Aircraft</b>	Engine (turbine/turboprop) - Malfunction (Cause) Fuel controlling system - Malfunction (Cause)
<b>Personnel issues</b>	Fabrication - Other/unknown (Factor) Post maintenance inspection - Maintenance personnel (Factor)
<b>Environmental issues</b>	Water - Contributed to outcome

## Factual Information

On April 24, 2009, about 1645 Pacific daylight time, an Allumax Epic LT, N653SB, collided with the waters of the Columbia River during a forced landing near Astoria, Oregon. The commercial pilot and his passenger were not injured, but the airplane, which was owned and operated by the pilot, sustained substantial damage. The 14 Code of Federal Regulations Part 91 personal pleasure flight, which was en route to Boeing Field, Seattle, Washington, departed Astoria Regional Airport about eight minutes prior to the accident. The accident occurred in visual meteorological conditions. The pilot filed an Instrument Flight Rules flight plan, but it had not yet been activated at the time of the accident.

According to the pilot, he was climbing to his en route cruise altitude when the airplane's Pratt & Whitney PT6-67A turbo-propeller engine suddenly stopped producing power. He therefore immediately turned back toward the airport he departed from, with the intention of making a power-off landing at that location. Immediately after turning back toward the airport, the pilot used the engine restart emergency checklist in an attempt to reestablish engine power, but was unsuccessful in that attempt. As he neared the airport, the pilot realized that he was not going to be able to stretch the glide far enough to reach the runway, so he elected to ditch the airplane in the Columbia River near the shoreline of downtown Astoria. During the ditching attempt, one of the airplane's horizontal stabilizers was partially torn from the airframe.

A post-accident teardown of the engine and its accessories determined that the fuel governor flyweights for the Woodward 8063-063 fuel control seized in the overspeed position, resulting in a command to the fuel governor to produce a minimum fuel flow (power roll-back). Further investigation revealed that the overspeed flyweights became seized because they were contaminated with metal particles from the disintegration of the fuel control unit tachometer drive bearing. The bearing was determined to have failed due to the tachometer shaft preload spacer (part number 3256-098) being machined out of parallel at the time of its production, and the failure of the assembling technician to correctly measure/inspect the spacer/bearing assembly at the time the fuel control was assembled.

## History of Flight

Enroute-climb to cruise	Powerplant sys/comp malf/fail Loss of engine power (partial) (Defining event)
Landing-flare/touchdown	Collision with terr/obj (non-CFIT)

## Pilot Information

<b>Certificate:</b>	Commercial	<b>Age:</b>	50, Male
<b>Airplane Rating(s):</b>	Multi-engine Land; Single-engine Land	<b>Seat Occupied:</b>	Left
<b>Other Aircraft Rating(s):</b>	None	<b>Restraint Used:</b>	Seatbelt, Shoulder harness
<b>Instrument Rating(s):</b>	Airplane	<b>Second Pilot Present:</b>	No
<b>Instructor Rating(s):</b>	None	<b>Toxicology Performed:</b>	No
<b>Medical Certification:</b>	Class 3 With Waivers/Limitations	<b>Last FAA Medical Exam:</b>	09/25/2007
<b>Occupational Pilot:</b>	No	<b>Last Flight Review or Equivalent:</b>	02/25/2008
<b>Flight Time:</b>	1550 hours (Total, all aircraft), 75 hours (Total, this make and model), 1460 hours (Pilot In Command, all aircraft), 75 hours (Last 90 days, all aircraft), 14 hours (Last 30 days, all aircraft), 1 hours (Last 24 hours, all aircraft)		

## Aircraft and Owner/Operator Information

<b>Aircraft Manufacturer:</b>	ELLUMAX LEASING LLC	<b>Registration:</b>	N653SB
<b>Model/Series:</b>	EPIC LT	<b>Aircraft Category:</b>	Airplane
<b>Year of Manufacture:</b>		<b>Amateur Built:</b>	Yes
<b>Airworthiness Certificate:</b>	Experimental	<b>Serial Number:</b>	025
<b>Landing Gear Type:</b>	Retractable - Tricycle	<b>Seats:</b>	6
<b>Date/Type of Last Inspection:</b>	12/10/2008, Condition	<b>Certified Max Gross Wt.:</b>	7500 lbs
<b>Time Since Last Inspection:</b>		<b>Engines:</b>	1 Turbo Prop
<b>Airframe Total Time:</b>	72 Hours at time of accident	<b>Engine Manufacturer:</b>	Pratt & Whitney
<b>ELT:</b>	C126 installed, not activated	<b>Engine Model/Series:</b>	PT6-67A
<b>Registered Owner:</b>	ELLUMAX LEASING LLC	<b>Rated Power:</b>	1200 hp
<b>Operator:</b>	On file	<b>Operating Certificate(s) Held:</b>	None

## Meteorological Information and Flight Plan

Conditions at Accident Site:	Visual Conditions	Condition of Light:	Day
Observation Facility, Elevation:		Observation Time:	
Distance from Accident Site:		Direction from Accident Site:	
Lowest Cloud Condition:	Clear	Temperature/Dew Point:	12 °C
Lowest Ceiling:	None	Visibility	10 Miles
Wind Speed/Gusts, Direction:	12 knots, 270°	Visibility (RVR):	
Altimeter Setting:		Visibility (RVV):	
Precipitation and Obscuration:	No Obscuration; No Precipitation		
Departure Point:	Astoria Regiona, OR (KAST)	Type of Flight Plan Filed:	IFR
Destination:	Boeing Field, WA (KBFI)	Type of Clearance:	None
Departure Time:	1635 PDT	Type of Airspace:	

## Wreckage and Impact Information

Crew Injuries:	1 None	Aircraft Damage:	Substantial
Passenger Injuries:	1 None	Aircraft Fire:	None
Ground Injuries:	N/A	Aircraft Explosion:	None
Total Injuries:	2 None	Latitude, Longitude:	46.192222, -123.835556 (est)

## Administrative Information

Investigator In Charge (IIC):	Orrin K Anderson	Adopted Date:	11/09/2009
Additional Participating Persons:	Erik Ramseyer; Portland FSDO; Portland, OR		
Publish Date:	11/21/2009		
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 <a href="mailto:pubinq@ntsb.gov">pubinq@ntsb.gov</a> , or at 800-877-6799. Dockets released after this date are available at <a href="http://dms.nts.gov/pubdms/">http://dms.nts.gov/pubdms/</a> .		

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