Aviation Investigation Final Report

Location:	Astoria, Oregon	**Accident Number:**	WPR09LA219
Date & Time:	April 24, 2009, 16:45 Local	**Registration:**	N653SB
Aircraft:	ELLUMAX LEASING LLC EPIC LT	**Aircraft Damage:**	Substantial
Defining Event:	Loss of engine power (partial)	**Injuries:**	2 None
Flight Conducted Under:	Part 91: General aviation - Personal		

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

Aircraft	(general) - Malfunction
Aircraft	Fuel controlling system - Malfunction
Personnel issues	Fabrication - Other
Personnel issues	Post maintenance inspection - Maintenance personnel
Environmental issues	Water - Contributed to outcome

Factual Information

History of Flight

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

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.

Pilot Information

Certificate:	Commercial	**Age:**	50,Male
Airplane Rating(s):	Single-engine land; Multi-engine land	**Seat Occupied:**	Left
Other Aircraft Rating(s):	None	**Restraint Used:**	
Instrument Rating(s):	Airplane	**Second Pilot Present:**	No
Instructor Rating(s):	None	**Toxicology Performed:**	No
Medical Certification:	Class 3 With waivers/limitations	**Last FAA Medical Exam:**	September 25, 2007
Occupational Pilot:	No	**Last Flight Review or Equivalent:**	February 25, 2008
Flight Time:	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

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

Meteorological Information and Flight Plan

Conditions at Accident Site:	Visual (VMC)	**Condition of Light:**	Day
Observation Facility, Elevation:		**Distance from Accident Site:**	
Observation Time:		**Direction from Accident Site:**	
Lowest Cloud Condition:	Clear	**Visibility**	10 miles
Lowest Ceiling:	None	**Visibility (RVR):**	
Wind Speed/Gusts:	12 knots /	**Turbulence Type Forecast/Actual:**	/
Wind Direction:	270°	**Turbulence Severity Forecast/Actual:**	/
Altimeter Setting:		**Temperature/Dew Point:**	12°C
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:	16:35 Local	**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):	Anderson, Orrin
Additional Participating Persons:	Erik Ramseyer; Portland FSDO; Portland, OR
Original Publish Date:	November 9, 2009
Last Revision Date:	
Investigation Class:	Class
Note:	
Investigation Docket:	https://data.ntsb.gov/Docket?ProjectID=73749