



# Aviation Investigation Final Report

<b>Location:</b>	Sequim, Washington	<b>Accident Number:</b>	WPR19LA125
<b>Date &amp; Time:</b>	April 28, 2019, 13:37 Local	<b>Registration:</b>	N68825
<b>Aircraft:</b>	Stearman A75N1(PT17)	<b>Aircraft Damage:</b>	Substantial
<b>Defining Event:</b>	Loss of engine power (total)	<b>Injuries:</b>	2 Minor
<b>Flight Conducted Under:</b>	Part 91: General aviation - Personal		

## Analysis

Shortly after takeoff for a personal flight, about 1,200 ft mean sea level, the pilot observed spraying oil and light oil smoke and detected the smell of oil coupled with an engine vibration. The pilot decided to make a forced landing. The engine vibration increased, and the engine seized before landing. The forced landing resulted in substantial damage to the right wing and fuselage.

Examination of the radial engine revealed a crankshaft failure due to fatigue; beach marks (also known as arrest marks) were observed in the region of the fracture surface. The maintenance records indicated that the last engine overhaul was accomplished about 15 years before the accident. Engine time since major overhaul recorded at the last annual inspection about 9 months before the accident was 143 hours.

## Probable Cause and Findings

The National Transportation Safety Board determines the probable cause(s) of this accident to be:

The total loss of engine power due to the fatigue failure of the crankshaft.

## Findings

<b>Aircraft</b>	Recip eng cyl section - Fatigue/wear/corrosion
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## Factual Information

### History of Flight

<b>Enroute</b>	Loss of engine power (total) (Defining event)
<b>Emergency descent</b>	Loss of engine power (total)
<b>Landing-flare/touchdown</b>	Collision with terr/obj (non-CFIT)

On April 28, 2019, about 1337 Pacific daylight time, a Boeing A75N1 biplane, N68825, was substantially damaged when it was involved in an accident near Sequim, Washington. The pilot sustained minor injuries. The airplane was operated as a Title 14 *Code of Federal Regulations* Part 91 local personal flight.

According to the pilot's statement, he had departed from runway 27 at Jefferson County Airport (0S9), Port Townsend, Washington, to the west. About 1,200 ft mean sea level (msl), over Discovery Bay, he began to smell burning oil. He then saw spraying oil and a light oil smoke coupled with engine vibration. A return to the departure airport was not an option, so he turned left toward land and began a slight descent with full power. The pilot stated that the terrain on the shoreline was rugged and the surrounding terrain above the shoreline was densely forested.

The pilot attempted to troubleshoot the engine vibration; however, there was no change, and the engine vibrations increased. The pilot stated that the windscreen, his face, and goggles were covered in oil and his forward visibility was greatly reduced. He reduced power to land on the rugged shoreline. As the pilot turned toward the beach, the engine seized, and his rate of descent increased. During the flare to land, the right main landing gear and right wing impacted the water. The airplane came to rest upright on the ground, oriented more than 90° from the direction of landing, and sustained substantial damage to the wing and fuselage.

A teardown examination of the engine was performed on May 8, 2019. When the No. 3 cylinder was removed the failed crankshaft was observed. Beach marks (also known as arrest marks), consistent with fatigue failure, were observed in the region of the fracture surface.

Maintenance records revealed that the airplane was powered by 220-HP Continental Motors W670-6A radial engine, serial number 16541. The most recent annual inspection was completed August 1, 2018, at a recorded tachometer reading of 555.4 hours; the tachometer reading at the time of the accident was 560 hours. Engine time since major overhaul was 143.2 hours.

Maintenance records further revealed that an engine overhaul was performed on April 3, 2004, the engine was completely disassembled. All steel components were magnafluxed and all aluminum parts were zyglow-inspected.

## Pilot Information

<b>Certificate:</b>	Airline transport	<b>Age:</b>	58, Male
<b>Airplane Rating(s):</b>	Single-engine land; Single-engine sea; Multi-engine land; Multi-engine sea	<b>Seat Occupied:</b>	Rear
<b>Other Aircraft Rating(s):</b>	None	<b>Restraint Used:</b>	4-point
<b>Instrument Rating(s):</b>	Airplane	<b>Second Pilot Present:</b>	No
<b>Instructor Rating(s):</b>	Airplane multi-engine; Airplane single-engine; Instrument airplane	<b>Toxicology Performed:</b>	No
<b>Medical Certification:</b>	Class 1 Without waivers/limitations	<b>Last FAA Medical Exam:</b>	January 15, 2019
<b>Occupational Pilot:</b>	Yes	<b>Last Flight Review or Equivalent:</b>	January 31, 2019
<b>Flight Time:</b>	(Estimated) 20000 hours (Total, all aircraft), 1.1 hours (Total, this make and model), 19000 hours (Pilot In Command, all aircraft), 225 hours (Last 90 days, all aircraft), 75 hours (Last 30 days, all aircraft), 3 hours (Last 24 hours, all aircraft)		

## Aircraft and Owner/Operator Information

<b>Aircraft Make:</b>	Stearman	<b>Registration:</b>	N68825
<b>Model/Series:</b>	A75N1(PT17) Undesignat	<b>Aircraft Category:</b>	Airplane
<b>Year of Manufacture:</b>	1942	<b>Amateur Built:</b>	
<b>Airworthiness Certificate:</b>	Restricted (Special)	<b>Serial Number:</b>	75-5708
<b>Landing Gear Type:</b>	Tailwheel	<b>Seats:</b>	2
<b>Date/Type of Last Inspection:</b>	August 1, 2018 Annual	<b>Certified Max Gross Wt.:</b>	2635 lbs
<b>Time Since Last Inspection:</b>	5 Hrs	<b>Engines:</b>	1 Reciprocating
<b>Airframe Total Time:</b>	555.4 Hrs as of last inspection	<b>Engine Manufacturer:</b>	Continental
<b>ELT:</b>	Installed, not activated	<b>Engine Model/Series:</b>	W670-6A
<b>Registered Owner:</b>		<b>Rated Power:</b>	220 Horsepower
<b>Operator:</b>		<b>Operating Certificate(s) Held:</b>	None

## Meteorological Information and Flight Plan

Conditions at Accident Site:	Visual (VMC)	Condition of Light:	Day
Observation Facility, Elevation:	NMI,0 ft msl	Distance from Accident Site:	20 Nautical Miles
Observation Time:		Direction from Accident Site:	161°
Lowest Cloud Condition:		Visibility	
Lowest Ceiling:		Visibility (RVR):	
Wind Speed/Gusts:	10 knots /	Turbulence Type Forecast/Actual:	None / None
Wind Direction:	270°	Turbulence Severity Forecast/Actual:	N/A / N/A
Altimeter Setting:		Temperature/Dew Point:	
Precipitation and Obscuration:	No Obscuration; No Precipitation		
Departure Point:	Port Townsend, WA (0S9 )	Type of Flight Plan Filed:	None
Destination:	Port Townsend, WA (0S9 )	Type of Clearance:	None
Departure Time:	13:28 Local	Type of Airspace:	Class G

## Wreckage and Impact Information

Crew Injuries:	1 Minor	Aircraft Damage:	Substantial
Passenger Injuries:	1 Minor	Aircraft Fire:	None
Ground Injuries:		Aircraft Explosion:	None
Total Injuries:	2 Minor	Latitude, Longitude:	48.047222,-122.874168(est)

## Administrative Information

Investigator In Charge (IIC):	Vanover, Jackie		
Additional Participating Persons:	Donald Bacon; FAA; Des Moines, WA		
Original Publish Date:	February 9, 2022	Investigation Class:	3
Note:	The NTSB did not travel to the scene of this accident.		
Investigation Docket:	<a href="https://data.nts.gov/Docket?ProjectID=99341">https://data.nts.gov/Docket?ProjectID=99341</a>		

The National Transportation Safety Board (NTSB), established in 1967, is an independent federal agency mandated by Congress through the Independent Safety Board Act of 1974 to investigate transportation accidents, determine the probable causes of the accidents, issue safety recommendations, study transportation safety issues, and evaluate the safety effectiveness of government agencies involved in transportation. The NTSB makes public its actions and decisions through accident reports, safety studies, special investigation reports, safety recommendations, and statistical reviews.

The Independent Safety Board Act, as codified at 49 U.S.C. Section 1154(b), precludes the admission into evidence or use of any part of an NTSB report related to an incident or accident in a civil action for damages resulting from a matter mentioned in the report. A factual report that may be admissible under 49 U.S.C. § 1154(b) is available [here](#).