



National Transportation Safety Board

Aviation Accident Data Summary

Location:	Newberg, OR	Accident Number:	WPR15FA205
Date & Time:	07/01/2015, 2215 PDT	Registration:	N2096W
Aircraft:	SCHWEIZER 269C	Injuries:	2 Fatal
Flight Conducted Under:	Part 91: General Aviation - Instructional		

Analysis

The instructor and student were conducting a night orientation flight. According to a witnesses who worked for the operator, about 15 minutes after the helicopter departed, he heard what sounded like an engine rollback and the helicopter making an autorotation. This was followed by the sound of an increase in engine rpm and the drive belts squealing, culminating with the sound of the helicopter making a loud thud-type noise. Another witness stated that the engine sounded rough and that the helicopter was making a high pitch whining/squealing sound, after which it went silent. A third witness also heard the helicopter making high pitch noise just before the accident. The helicopter was subsequently located in an open field near the departure airport; a postcrash fire erupted, which consumed the helicopter.

A postaccident examination of the lower coupling drive shaft showed evidence of severe wear completely around the forward spline that extended beyond the root of the spline teeth. Severe wear of the forward spline teeth could have been caused by a loss of alignment between the engine and the drive shaft or an inflight loss of lubrication in the rubber boot. The rubber boot that retains grease for the forward spline portion of the drive shaft was not recovered and was presumed missing. Loss of grease coverage for the forward spline, either from a rupture of the rubber boot or a loss of the clamp for the rubber boot, could cause sudden inflight wear and overheating of the spline teeth. Severe wear of the forward spline portion of the lower coupling drive shaft most likely led to sudden and complete loss of translational/rotational power between the engine and the transmission. The reason for the severe wear of the forward spline could not be definitively determined due to fire damage and the loss of associated components, which were not located during the investigation.

Flight Events

Approach-VFR pattern downwind - Sys/Comp malf/fail (non-power)
Emergency descent - Off-field or emergency landing
Landing-flare/touchdown - Hard landing

Probable Cause

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

The loss of translation/rotational power between the engine and the transmission due to the severe wear of the forward spline portion of the lower coupling drive shaft. The reason for the severe wear of the forward spline could not be definitively determined due to fire damage and the loss of associated components, which were not located during the investigation.

Findings

Not determined-Not determined-(general)-(general)-Unknown/Not determined - C

Flight Instructor Information

Certificate:	Flight Instructor; Commercial	Age:	31
Airplane Rating(s):	None	Instrument Rating(s):	Helicopter
Other Aircraft Rating(s):	None	Instructor Rating(s):	Helicopter
Flight Time:	354.6 hours (Total, all aircraft), 146.2 hours (Total, this make and model), 284.2 hours (Pilot In Command, all aircraft), 122.5 hours (Last 90 days, all aircraft), 66.8 hours (Last 30 days, all aircraft), 3.8 hours (Last 24 hours, all aircraft)		

Student Pilot Information

Certificate:	Student	Age:	29
Airplane Rating(s):	None	Instrument Rating(s):	None
Other Aircraft Rating(s):	None	Instructor Rating(s):	None
Flight Time:	55.2 hours (Total, all aircraft), 55.2 hours (Total, this make and model), 6 hours (Pilot In Command, all aircraft), 38.3 hours (Last 90 days, all aircraft), 19.1 hours (Last 30 days, all aircraft), 2.3 hours (Last 24 hours, all aircraft)		

Aircraft and Owner/Operator Information

Aircraft Manufacturer:	SCHWEIZER	Registration:	N2096W
Model/Series:	269C	Engines:	1 Reciprocating
Operator:	Precision Aviation Training, LLC	Engine Manufacturer:	Lycoming
Air Carrier Operating Certificate:	Pilot School (141)	Engine Model/Series:	HIO-360
Flight Conducted Under:	Part 91: General Aviation - Instructional		

Meteorological Information and Flight Plan

Observation Facility, Elevation:	MMV, 163 ft msl	Weather Information Source:	Weather Observation Facility
Conditions at Accident Site:	Visual Conditions	Lowest Ceiling:	None
Condition of Light:	Night	Wind Speed/Gusts, Direction:	4 knots, 260°
Temperature:	22° C / 14° C	Visibility	10 Miles
Precipitation and Obscuration:	No Obscuration; No Precipitation		
Departure Point:	Newberg, OR (17S)	Destination:	Newberg, OR (17S)

Airport Information

Airport:	Chehalem Airpark (17S)	Runway Surface Type:	N/A
Runway Used:	N/A	Runway Surface Condition:	Dry; Vegetation
Runway Length/Width:			

Wreckage and Impact Information

Crew Injuries:	2 Fatal	Aircraft Damage:	Destroyed
Passenger Injuries:	N/A	Aircraft Fire:	On-Ground
Ground Injuries:	N/A	Aircraft Explosion:	None

Administrative Information

Investigator In Charge (IIC):	Thomas Little	Adopted Date:	10/04/2016
Note:	The NTSB traveled to the scene of this accident.		
Investigation Docket:	http://dms.nts.gov/pubdms/search/dockList.cfm?mKey=91482		

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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.