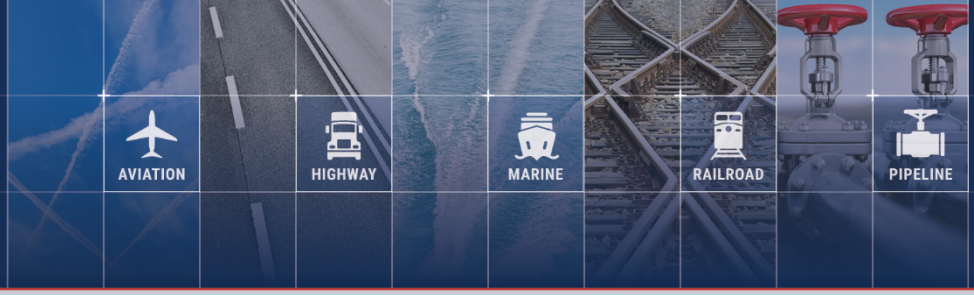

Aviation Investigation Final Report

Location:	Pasco, Washington	**Accident Number:**	WPR12LA244
Date & Time:	June 4, 2012, 06:45 Local	**Registration:**	N93467
Aircraft:	Hiller UH-12B	**Aircraft Damage:**	Substantial
Defining Event:	Low altitude operation/event	**Injuries:**	1 None
Flight Conducted Under:	Part 91: General aviation - Other work use		

Analysis

The pilot of the helicopter was maneuvering at a low altitude over a fruit orchard to dry the trees. After completing one section of the orchard, he climbed higher in order to check for obstacles near the adjacent orchard that he planned to dry next. While descending into position to work the adjacent orchard, the pilot noticed that the main rotor rpm was beginning to decay. Although he added some power, the rpm decay continued. He therefore made the decision to lower the collective, but realized he was too low to do so. Because he still had some forward airspeed and was able to maintain a controlled descent, the pilot maneuvered to land in an opening between the trees; however, the helicopter impacted trees just before it touched down. A postaccident examination of the engine and airframe revealed no evidence of mechanical malfunctions or failures that would have precluded normal operation.

Probable Cause and Findings

The National Transportation Safety Board determines the probable cause(s) of this accident to be: The pilot's failure to maintain the helicopter's rotor rpm while maneuvering at a low altitude over a fruit orchard.

Findings

Aircraft	Prop/rotor parameters - Not attained/maintained
Personnel issues	Incorrect action performance - Pilot

Factual Information

History of Flight

Maneuvering-low-alt flying	Low altitude operation/event (Defining event)
Maneuvering-low-alt flying	Collision with terr/obj (non-CFIT)

On June 4, 2012, about 0645 Pacific daylight time, a Hiller UH-12B helicopter, N93467, impacted fruit trees in an orchard near Pasco, Washington. The commercial pilot, who was the sole occupant, was not injured, but the helicopter, which was being operated by Larsen Helicopter Operations, sustained substantial damage. The 14 Code of Federal Regulations Part 91 fruit orchard drying operation was being performed in visual meteorological conditions. The pilot departed Tri-Cities Airport, Pasco, Washington, about 0615. No flight plan had been filed.

According to the pilot, who had just completed drying one section of the orchard with the air blast from his main rotor blades, he ascended to about 100 to 150 feet above the trees in order to look for any obstacles around a separate section of the orchard that he was going to dry next. He then started to descend to the low level that he would be working at over the trees. During that descent, he realized that the helicopter's main rotor rpm, which had been in the lower part of the normal operating range at the beginning of the descent, had begun to decrease. He therefore began to roll on the throttle in order to compensate, but the rpm continued to decay. He then decided to lower the collective in an attempt to recover the rotor rpm, but by then he was about 20 feet above the trees. He therefore rolled the throttle to full power, and tried to pump the collective, but the rpm continued to decay. Because he still had some forward airspeed and enough rotor rpm to keep the helicopter in a controlled slow descent, the pilot maintained a level attitude and maneuvered the helicopter to a position between two rows of trees, where it settled to the terrain in the upright position. Just before the helicopter settled to the terrain, both its main rotor and the tail rotor came in contact with the fruit trees.

After an initial examination at the accident site by a Federal Aviation Administration Inspector, the helicopter was taken to the facilities of AvTech Services, in Maple Valley, Washington. There, both the engine and the airframe were examined by an NTSB Aviation Safety Investigator. That examination confirmed spark at all spark plug leads, compression in all cylinders, gear continuity to the accessory section, and normal wear of the spark plug electrodes. In addition, after disassembly, the carburetor bowl was determined to contain a small amount of fuel consistent with aviation low lead, and except for a small sliver of metal in its inlet finger screen, the carburetor showed no evidence of preimpact anomalies or malfunction. The oil filter contained no metal or foreign debris, and the internal gearing appeared to be well lubricated, with no visible sign of thermal distress.

The engine could not be test run due to impact damage to the crankcase, but at the time of the

completion of the examination, no evidence of any preimpact malfunction associated with the airframe or engine had been found. And, although the pilot reported that during the engine start process it appeared that there may not have been sufficient voltage coming from the battery, he did not report any unusual engine sounds or engine performance irregularities at any time during the flight.

Pilot Information

Certificate:	Commercial; Flight instructor	**Age:**	31,Male
Airplane Rating(s):	None	**Seat Occupied:**	Center
Other Aircraft Rating(s):	Helicopter	**Restraint Used:**	
Instrument Rating(s):	None	**Second Pilot Present:**	No
Instructor Rating(s):	Helicopter	**Toxicology Performed:**	No
Medical Certification:	Class 2 Without waivers/limitations	**Last FAA Medical Exam:**	November 14, 2011
Occupational Pilot:	Yes	**Last Flight Review or Equivalent:**	September 21, 2011
Flight Time:	569 hours (Total, all aircraft), 40 hours (Total, this make and model), 510 hours (Pilot In Command, all aircraft), 50 hours (Last 90 days, all aircraft), 20 hours (Last 30 days, all aircraft), 3 hours (Last 24 hours, all aircraft)		

Aircraft and Owner/Operator Information

Aircraft Make:	Hiller	**Registration:**	N93467
Model/Series:	UH-12B	**Aircraft Category:**	Helicopter
Year of Manufacture:		**Amateur Built:**	
Airworthiness Certificate:	Normal	**Serial Number:**	589
Landing Gear Type:	Skid	**Seats:**	3
Date/Type of Last Inspection:	March 18, 2012 Annual	**Certified Max Gross Wt.:**	2500 lbs
Time Since Last Inspection:		**Engines:**	1 Reciprocating
Airframe Total Time:	3627 Hrs as of last inspection	**Engine Manufacturer:**	FRANKLIN
ELT:	Installed, not activated	**Engine Model/Series:**	6v-335-b
Registered Owner:	ENVIRONMENTAL SITE RESTORATION INC	**Rated Power:**	210 Horsepower
Operator:	Larsen Helicopter Operations	**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:	Few / 7500 ft AGL	**Visibility**	10 miles
Lowest Ceiling:	Overcast / 11000 ft AGL	**Visibility (RVR):**	
Wind Speed/Gusts:	/	**Turbulence Type Forecast/Actual:**	/
Wind Direction:		**Turbulence Severity Forecast/Actual:**	/
Altimeter Setting:		**Temperature/Dew Point:**	9°C
Precipitation and Obscuration:	Light - None - Rain		
Departure Point:	Pasco, WA (KPSC)	**Type of Flight Plan Filed:**	None
Destination:	Pasco, WA (KPSC)	**Type of Clearance:**	None
Departure Time:	06:15 Local	**Type of Airspace:**	

Wreckage and Impact Information

Crew Injuries:	1 None	**Aircraft Damage:**	Substantial
Passenger Injuries:		**Aircraft Fire:**	None
Ground Injuries:	N/A	**Aircraft Explosion:**	None
Total Injuries:	1 None	**Latitude, Longitude:**	46.386112,-119.241386(est)

Administrative Information

Investigator In Charge (IIC):	Anderson, Orrin
Additional Participating Persons:	Stephen Dunn; Spokane FSDO; Spokane, WA
Original Publish Date:	March 13, 2013
Last Revision Date:	
Investigation Class:	Class
Note:	
Investigation Docket:	https://data.ntsb.gov/Docket?ProjectID=83846