



# Aviation Investigation Final Report

<b>Location:</b>	DETROIT, Oregon	<b>Accident Number:</b>	SEA97TA012
<b>Date &amp; Time:</b>	October 20, 1996, 16:40 Local	<b>Registration:</b>	N98NW
<b>Aircraft:</b>	Garlick                      UH-1H	<b>Aircraft Damage:</b>	Substantial
<b>Defining Event:</b>		<b>Injuries:</b>	1 Minor
<b>Flight Conducted Under:</b>	Public aircraft		

## Analysis

The pilot stated that he had just landed at a remote site after emptying his bucket. As he unloaded the main rotor, it contacted a berm on the right side of the helicopter. This resulted in a sudden stoppage and damage to the transmission.

## Probable Cause and Findings

The National Transportation Safety Board determines the probable cause(s) of this accident to be: the pilot's misjudgement of rotor clearance from the terrain. The proximity of the berm was a related factor.

## Findings

Occurrence #1: ON GROUND/WATER ENCOUNTER WITH TERRAIN/WATER  
Phase of Operation: LANDING

### Findings

1. (F) TERRAIN CONDITION - BERM
2. (C) CLEARANCE - MISJUDGED - PILOT IN COMMAND

## Factual Information

On October 20, 1996, approximately 1640 Pacific daylight time, a Garlick UH-1H helicopter, N98NW, sustained substantial damage when the main rotor collided with terrain during landing near Detroit Lake, Detroit, Oregon. The airline transport pilot received minor injuries. The helicopter was being operated by the US Forest Service, and was being used to spread fertilizer on the Willamette National Forest. No flight plan was filed for the flight, which was conducted in visual meteorological conditions as a public use activity. There was no report of the ELT actuating, and the pilot turned it off after the accident.

The pilot stated that he had just landed after emptying his bucket. As he unloaded the rotor, the main rotor contacted a berm on the right side of the helicopter, causing sudden stoppage and separation of the transmission, and additional damage.

### Pilot Information

<b>Certificate:</b>	Airline transport; Flight instructor	<b>Age:</b>	37, Male
<b>Airplane Rating(s):</b>	Single-engine land; Multi-engine land	<b>Seat Occupied:</b>	Left
<b>Other Aircraft Rating(s):</b>	Helicopter	<b>Restraint Used:</b>	
<b>Instrument Rating(s):</b>	Airplane; Helicopter	<b>Second Pilot Present:</b>	No
<b>Instructor Rating(s):</b>	Helicopter	<b>Toxicology Performed:</b>	No
<b>Medical Certification:</b>	Class 2 Valid Medical--no waivers/lim.	<b>Last FAA Medical Exam:</b>	August 30, 1996
<b>Occupational Pilot:</b>	Yes	<b>Last Flight Review or Equivalent:</b>	
<b>Flight Time:</b>	5700 hours (Total, all aircraft), 2000 hours (Total, this make and model), 5250 hours (Pilot In Command, all aircraft), 200 hours (Last 90 days, all aircraft), 45 hours (Last 30 days, all aircraft), 4 hours (Last 24 hours, all aircraft)		

## Aircraft and Owner/Operator Information

<b>Aircraft Make:</b>	Garlick	<b>Registration:</b>	N98NW
<b>Model/Series:</b>	UH-1H UH-1H	<b>Aircraft Category:</b>	Helicopter
<b>Year of Manufacture:</b>		<b>Amateur Built:</b>	
<b>Airworthiness Certificate:</b>	Restricted (Special)	<b>Serial Number:</b>	4529
<b>Landing Gear Type:</b>	Skid	<b>Seats:</b>	3
<b>Date/Type of Last Inspection:</b>	October 3, 1996 Continuous airworthiness	<b>Certified Max Gross Wt.:</b>	9500 lbs
<b>Time Since Last Inspection:</b>	23 Hrs	<b>Engines:</b>	1 Turbo shaft
<b>Airframe Total Time:</b>	12360 Hrs	<b>Engine Manufacturer:</b>	Lycoming
<b>ELT:</b>	Installed, not activated	<b>Engine Model/Series:</b>	T55-L-13B
<b>Registered Owner:</b>	REYNOLDS AVIATION, INC.	<b>Rated Power:</b>	1400 Horsepower
<b>Operator:</b>	USFS	<b>Operating Certificate(s) Held:</b>	None
<b>Operator Does Business As:</b>		<b>Operator Designator Code:</b>	

## Meteorological Information and Flight Plan

<b>Conditions at Accident Site:</b>	Visual (VMC)	<b>Condition of Light:</b>	Day
<b>Observation Facility, Elevation:</b>		<b>Distance from Accident Site:</b>	
<b>Observation Time:</b>		<b>Direction from Accident Site:</b>	
<b>Lowest Cloud Condition:</b>	Clear	<b>Visibility</b>	10 miles
<b>Lowest Ceiling:</b>	None	<b>Visibility (RVR):</b>	
<b>Wind Speed/Gusts:</b>	/	<b>Turbulence Type Forecast/Actual:</b>	/
<b>Wind Direction:</b>	0°	<b>Turbulence Severity Forecast/Actual:</b>	/
<b>Altimeter Setting:</b>	29 inches Hg	<b>Temperature/Dew Point:</b>	1°C
<b>Precipitation and Obscuration:</b>	No Obscuration; No Precipitation		
<b>Departure Point:</b>		<b>Type of Flight Plan Filed:</b>	None
<b>Destination:</b>		<b>Type of Clearance:</b>	None
<b>Departure Time:</b>	07:30 Local	<b>Type of Airspace:</b>	

## Airport Information

<b>Airport:</b>		<b>Runway Surface Type:</b>	
<b>Airport Elevation:</b>		<b>Runway Surface Condition:</b>	
<b>Runway Used:</b>	0	<b>IFR Approach:</b>	None
<b>Runway Length/Width:</b>		<b>VFR Approach/Landing:</b>	

## Wreckage and Impact Information

<b>Crew Injuries:</b>	1 Minor	<b>Aircraft Damage:</b>	Substantial
<b>Passenger Injuries:</b>		<b>Aircraft Fire:</b>	None
<b>Ground Injuries:</b>	N/A	<b>Aircraft Explosion:</b>	None
<b>Total Injuries:</b>	1 Minor	<b>Latitude, Longitude:</b>	44.739688,-121.87957(est)

## Administrative Information

<b>Investigator In Charge (IIC):</b>	Stockhill, Michael
<b>Additional Participating Persons:</b>	ROGER PHILLIPS; HILLSBORO , OR DENNY BRIDGES; MISSOULA , MT
<b>Original Publish Date:</b>	August 21, 1997
<b>Last Revision Date:</b>	
<b>Investigation Class:</b>	<a href="#">Class</a>
<b>Note:</b>	
<b>Investigation Docket:</b>	<a href="https://data.ntsb.gov/Docket?ProjectID=42699">https://data.ntsb.gov/Docket?ProjectID=42699</a>

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