Aviation Investigation Final Report

Location:	HAINES, Oregon	**Accident Number:**	SEA00LA124
Date & Time:	July 4, 2000, 07:30 Local	**Registration:**	N30DP
Aircraft:	Bell 47G	**Aircraft Damage:**	Substantial
Defining Event:		**Injuries:**	1 Minor
Flight Conducted Under:	Part 137: Agricultural		

Analysis

The pilot, who had to approach his spray runs by flying over hilly terrain, misjudged his rate of descent and inadvertently delayed his level off. This resulted in the skids impacting the terrain, followed by the helicopter rolling over at least three times. There were no problems with the powerplant or the aircraft's flight control system.

Probable Cause and Findings

The National Transportation Safety Board determines the probable cause(s) of this accident to be: The pilot's failure to correctly judge his rate of descent and his failure to initiate his level off soon enough to keep the helicopter from impacting the terrain. Factors include hilly terrain near the edge of the field he was spraying.

Findings

Occurrence #1: IN FLIGHT COLLISION WITH TERRAIN/WATER
Phase of Operation: MANEUVERING

Findings
1. (C) DESCENT - MISJUDGED - PILOT IN COMMAND
2. (C) FLARE - DELAYED - PILOT IN COMMAND
3. (F) TERRAIN CONDITION - MOUNTAINOUS/HILLY

Factual Information

On July 4, 2000, approximately 0730 Pacific daylight time, a Bell 47G helicopter, N30DP, impacted the terrain during an aerial application run near Haines, Oregon. The commercial pilot, who was the sole occupant of the aircraft, received minor injuries, and the helicopter, which was owned and operated by the pilot, sustained substantial damage. The 14 CFR Part 137 aerial application flight, which had been airborne for about 10 minutes, was being operated in visual meteorological conditions. No flight plan had been filed, and there was no report of an ELT activation.

According to the pilot, who had to approach his spray runs over rolling terrain, he had completed one run and was maneuvering for the second when the aircraft contacted the ground. He said that as he descended over a small hill while lining up for the second swath, he misjudged his rate of descent toward the terrain, and waited too long to initiate his level off. This resulted in the skids of the helicopter contacting the surface of the field. Immediately after the aircraft's skids touched the terrain, it rolled over at least three times. The pilot further stated that there did not appear to be any problems with the engine or the aircraft's flight control system.

Pilot Information

Certificate:	Commercial	**Age:**	36,Male
Airplane Rating(s):	Single-engine land	**Seat Occupied:**	Left
Other Aircraft Rating(s):	Helicopter	**Restraint Used:**	
Instrument Rating(s):	Airplane	**Second Pilot Present:**	No
Instructor Rating(s):	None	**Toxicology Performed:**	No
Medical Certification:	Class 2 Valid Medical--w/ waivers/lim	**Last FAA Medical Exam:**	March 1, 2000
Occupational Pilot:	Yes	**Last Flight Review or Equivalent:**	
Flight Time:	1113 hours (Total, all aircraft), 319 hours (Total, this make and model), 980 hours (Pilot In Command, all aircraft), 47 hours (Last 90 days, all aircraft), 38 hours (Last 30 days, all aircraft), 1 hours (Last 24 hours, all aircraft)		

Aircraft and Owner/Operator Information

Aircraft Make:	Bell	**Registration:**	N30DP
Model/Series:	47G 47G	**Aircraft Category:**	Helicopter
Year of Manufacture:		**Amateur Built:**	
Airworthiness Certificate:	Normal; Restricted (Special)	**Serial Number:**	3751
Landing Gear Type:	Skid	**Seats:**	3
Date/Type of Last Inspection:	January 5, 2000 Annual	**Certified Max Gross Wt.:**	2950 lbs
Time Since Last Inspection:	45 Hrs	**Engines:**	1 Reciprocating
Airframe Total Time:		**Engine Manufacturer:**	Lycoming
ELT:	Installed, not activated	**Engine Model/Series:**	TVO-435-D1A
Registered Owner:	CARL A. JOHNSON	**Rated Power:**	270 Horsepower
Operator:		**Operating Certificate(s) Held:**	
Operator Does Business As:	JOHNSON HELICOPTERS LLC	**Operator Designator Code:**	

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**	30 miles
Lowest Ceiling:	None	**Visibility (RVR):**	
Wind Speed/Gusts:	/	**Turbulence Type Forecast/Actual:**	/
Wind Direction:	0°	**Turbulence Severity Forecast/Actual:**	/
Altimeter Setting:		**Temperature/Dew Point:**	10°C
Precipitation and Obscuration:	No Obscuration; No Precipitation		
Departure Point:		**Type of Flight Plan Filed:**	None
Destination:		**Type of Clearance:**	None
Departure Time:	07:28 Local	**Type of Airspace:**	Class G

Airport Information

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

Wreckage and Impact Information

Crew Injuries:	1 Minor	**Aircraft Damage:**	Substantial
Passenger Injuries:		**Aircraft Fire:**	None
Ground Injuries:	N/A	**Aircraft Explosion:**	None
Total Injuries:	1 Minor	**Latitude, Longitude:**	44.939735,-117.97013(est)

Administrative Information

Investigator In Charge (IIC):	Anderson, Orrin
Additional Participating Persons:	JUDY PETERSON;
Original Publish Date:	March 2, 2001
Last Revision Date:	
Investigation Class:	Class
Note:	The NTSB traveled to the scene of this accident.
Investigation Docket:	https://data.ntsb.gov/Docket?ProjectID=49607