



National Transportation Safety Board Aviation Accident Data Summary

Location:	Philip, SD	Accident Number:	CEN12FA001
Date & Time:	10/01/2011, 1255 MDT	Registration:	N266CY
Aircraft:	ROBINSON HELICOPTER CO R66	Injuries:	1 Fatal
Flight Conducted Under:	Part 91: General Aviation - Personal		

Analysis

The helicopter was on a cross-country flight when it experienced a separation of the main rotor mast 8 inches below the teeter bolt, and the main rotor blade assembly separated from the flying helicopter. Subsequently, the helicopter impacted terrain and a postimpact fire ensued. Examination of the mast revealed fracture features consistent with overload failure and mechanical damage indicative of mast bumping. An examination of the airframe, engine, and remaining systems revealed no preimpact anomalies. The reason for the mast bumping event could not be determined due to the amount of thermal damage to the wreckage.

Flight Events

Enroute-cruise - Unknown or undetermined
Enroute-cruise - Aircraft structural failure
Uncontrolled descent - Part(s) separation from AC
Uncontrolled descent - Collision with terr/obj (non-CFIT)

Probable Cause

The National Transportation Safety Board determines the probable cause(s) of this accident to be: The in-flight separation of the main rotor mast following a mast bumping event. The reason for the mast bumping event could not be determined due to postaccident damage.

Findings

Aircraft-Aircraft propeller/rotor-Main rotor system-Main rotor head system-Damaged/degraded - C
Aircraft-Aircraft propeller/rotor-Main rotor system-Main rotor head system-Failure - C

Pilot Information

Certificate:	Private	Age:	64
Airplane Rating(s):	Multi-engine Land; Single-engine Land	Instrument Rating(s):	Airplane
Other Aircraft Rating(s):	Helicopter	Instructor Rating(s):	None
Flight Time:	(Estimated) 3600 hours (Total, all aircraft), 22 hours (Total, this make and model), 60 hours (Last 90 days, all aircraft)		

Aircraft and Owner/Operator Information

Aircraft Manufacturer:	ROBINSON HELICOPTER CO	Registration:	N266CY
Model/Series:	R66	Engines:	1 Turbo Shaft
Operator:	P P & J LLC	Engine Manufacturer:	ROLLS-ROYCE
Air Carrier Operating Certificate:	None	Engine Model/Series:	RR300
Flight Conducted Under:	Part 91: General Aviation - Personal		

Meteorological Information and Flight Plan

Observation Facility, Elevation:	PHP, 2209 ft msl	Weather Information Source:	Weather Observation Facility
Conditions at Accident Site:	Visual Conditions	Lowest Ceiling:	None
Condition of Light:	Day	Wind Speed/Gusts, Direction:	6 knots, 150°
Temperature:	29° C / 4° C	Visibility	10 Miles
Precipitation and Obscuration:	No Obscuration; No Precipitation		
Departure Point:	Gillette, WY (GCC)	Destination:	Winner, SD (ICR)

Wreckage and Impact Information

Crew Injuries:	1 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):	Timothy LeBaron	Adopted Date:	04/10/2014
Investigation Docket:	http://dms.nts.gov/pubdms/search/dockList.cfm?mKey=81955		

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