Aviation Investigation Final Report

Location:	Glacier View, Alaska	**Accident Number:**	ANC24LA013
Date & Time:	February 11, 2024, 11:30 Local	**Registration:**	N74868
Aircraft:	ROBINSON HELICOPTER COMPANY R44 II	**Aircraft Damage:**	Substantial
Defining Event:	Sys/Comp malf/fail (non-power)	**Injuries:**	1 None
Flight Conducted Under:	Part 91: General aviation - Business		

Analysis

The pilot stated that he was flying the helicopter solo with the doors removed while scouting potential locations for an aerial photography flight scheduled for later that day. During cruise flight, he heard a loud “boom” and felt a slight airframe vibration. He subsequently lost tail rotor thrust and performed an autorotation to an area of snow-covered, mountainous terrain.

Examination revealed the tail rotor driveshaft was fractured between the forward and aft flex plates. Further examination of the tail rotor driveshaft revealed the fractures were consistent with ductile tension overload. There was no evidence of pre-existing cracks or other damage to the fracture surfaces. The tail rotor blades were not damaged during the accident sequence, and there were no mechanical anomalies found with the tail rotor gearbox assembly.

The torsional twisting of the fractured surfaces of the tail rotor driveshaft is consistent with a sudden binding of the tail rotor gearbox, or a rapid deceleration of the tail rotor blades. There was no damage evident to the tail rotor assembly from a bird strike or impact with a hard object.

Although, if a small rag or towel was overlooked during the preflight inspection and it had blown out of the helicopter during the doors-off flight, it likely would have been struck by the tail rotor, resulting in the rapid deceleration of the tail rotor blades, with little to no detectable damage. Thus, the reason for the torsional fracture of the tail rotor driveshaft could not be determined.

Probable Cause and Findings

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

A sudden stoppage of the tail rotor for unknown reasons, which resulted in the tortional overload failure of the tail rotor driveshaft.

Findings

Aircraft	Tail rotor blade - Unknown/Not determined
Aircraft	Tail rotor drive shaft - Failure

Factual Information

History of Flight

Enroute	Sys/Comp malf/fail (non-power) (Defining event)
Enroute	Off-field or emergency landing

On February 11, 2024, about 1130 Alaska standard time, a Robinson Helicopter R44 II, N74868, was substantially damaged when it was involved in an accident near Glacier View, Alaska. The pilot was not injured. The helicopter was operated as a Title 14 *Code of Federal Regulations* Part 91 business flight.

According to the pilot, while in cruise flight with both aft doors removed, about 700 ft above an area of snow-covered glacial terrain, he heard a loud "boom" noise and felt a slight airframe vibration. The pilot stated that he subsequently lost tail rotor thrust and that he then performed an autorotation to an area of snow-covered, mountainous terrain.

A postaccident inspection, after the helicopter was recovered, revealed that the tail rotor driveshaft was fractured between the forward and aft flex plates, which resulted in substantial damage to the tail rotor driveshaft system.

The fractured pieces of the tail rotor driveshaft were sent to the NTSB Materials Laboratory for further examination. The examination revealed the fractures were consistent with ductile torsion overload. There was no evidence of pre-existing cracks or other damage to the driveshaft surfaces. The tail rotor blades were not damaged.

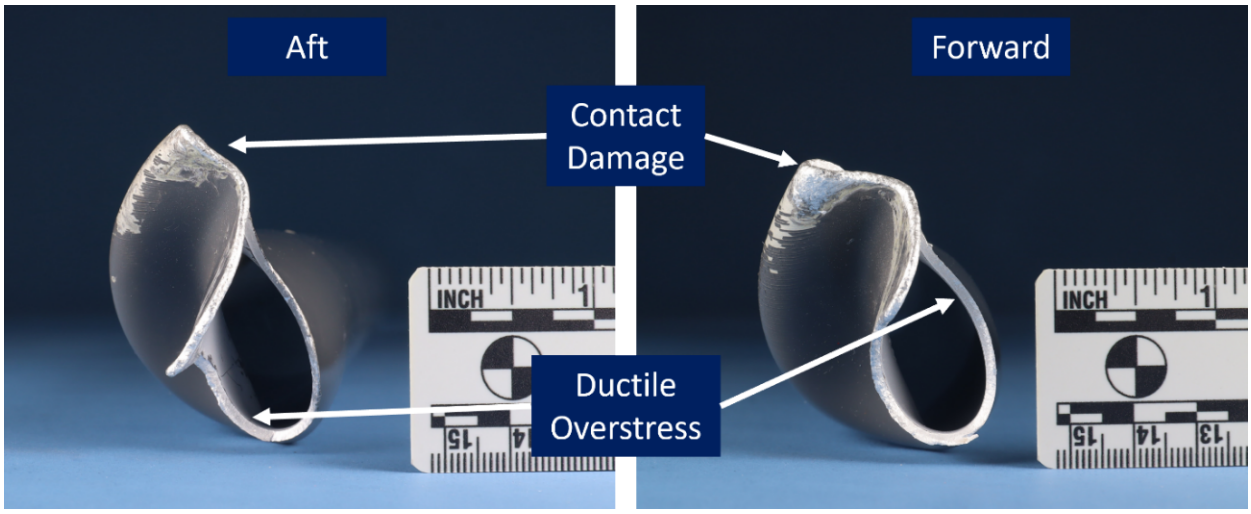

Figure 1. View of the tail rotor driveshaft fracture surfaces

The tail rotor gearbox assembly was removed from the accident helicopter and no anomalies were discovered.

The pilot stated that he did not have a passenger, but that he did have the doors off in preparation for a passenger/photographer later that day. He also stated that during his preflight inspection, he checked for loose items that could blow out and strike the tail rotor.

The pilot did not submit the National Transportation Safety Board Pilot/Operator Aircraft Accident/Incident Report Form 6120.1.

Pilot Information

Certificate:	Commercial; Flight engineer; Remote	**Age:**	39,Male
Airplane Rating(s):	Single-engine land; Multi-engine land	**Seat Occupied:**	Right
Other Aircraft Rating(s):	Helicopter	**Restraint Used:**	Unknown
Instrument Rating(s):	Airplane	**Second Pilot Present:**	No
Instructor Rating(s):	Airplane single-engine; Helicopter	**Toxicology Performed:**	
Medical Certification:	Class 2 Without waivers/limitations	**Last FAA Medical Exam:**	
Occupational Pilot:	Yes	**Last Flight Review or Equivalent:**	
Flight Time:	(Estimated) 5000 hours (Total, all aircraft)		

Aircraft and Owner/Operator Information

Aircraft Make:	ROBINSON HELICOPTER COMPANY	**Registration:**	N74868
Model/Series:	R44 II	**Aircraft Category:**	Helicopter
Year of Manufacture:		**Amateur Built:**	
Airworthiness Certificate:	Normal	**Serial Number:**	11038
Landing Gear Type:	Skid	**Seats:**	4
Date/Type of Last Inspection:	Unknown	**Certified Max Gross Wt.:**	
Time Since Last Inspection:		**Engines:**	1 Reciprocating
Airframe Total Time:		**Engine Manufacturer:**	LYCOMING
ELT:		**Engine Model/Series:**	IO-540 SER
Registered Owner:	SHEEP MOUNTAIN AIR LLC	**Rated Power:**	300 Horsepower
Operator:	SHEEP MOUNTAIN AIR LLC	**Operating Certificate(s) Held:**	On-demand air taxi (135)

Meteorological Information and Flight Plan

Conditions at Accident Site:	Visual (VMC)	**Condition of Light:**	Day
Observation Facility, Elevation:	AZK,2953 ft msl	**Distance from Accident Site:**	21 Nautical Miles
Observation Time:	10:56 Local	**Direction from Accident Site:**	
Lowest Cloud Condition:		**Visibility**	10 miles
Lowest Ceiling:	None	**Visibility (RVR):**	
Wind Speed/Gusts:	4 knots /	**Turbulence Type Forecast/Actual:**	None / None
Wind Direction:	240°	**Turbulence Severity Forecast/Actual:**	N/A / N/A
Altimeter Setting:	29.49 inches Hg	**Temperature/Dew Point:**	-9°C / -9°C
Precipitation and Obscuration:			
Departure Point:	Glacier View, AK (PVT)	**Type of Flight Plan Filed:**	None
Destination:	Glacier View, AK (PVT)	**Type of Clearance:**	None
Departure Time:		**Type of Airspace:**	Unknown

Airport Information

Airport:	Ridgeline NONE	**Runway Surface Type:**	
Airport Elevation:		**Runway Surface Condition:**	Snow
Runway Used:		**IFR Approach:**	None
Runway Length/Width:		**VFR Approach/Landing:**	Forced landing;Precautionary landing

Wreckage and Impact Information

Crew Injuries:	1 None	**Aircraft Damage:**	Substantial
Passenger Injuries:	N/A	**Aircraft Fire:**	None
Ground Injuries:		**Aircraft Explosion:**	None
Total Injuries:	1 None	**Latitude, Longitude:**	61.661298,-147.58215

Administrative Information

Investigator In Charge (IIC):	Hill, Millicent
Additional Participating Persons:	Michael Marratt; FAA/FSDO; Anchorage, AK
Original Publish Date:	April 29, 2026
Last Revision Date:	
Investigation Class:	Class 3
Note:	The NTSB did not travel to the scene of this accident.
Investigation Docket:	https://data.ntsb.gov/Docket?ProjectID=193797