



National Transportation Safety Board Aviation Accident Final Report

Location:	Newark, OH	Accident Number:	GAA18CA089
Date & Time:	12/13/2017, 1610 EST	Registration:	N441ML
Aircraft:	ROBINSON HELICOPTER COMPANY R44	Aircraft Damage:	Substantial
Defining Event:	Dynamic rollover	Injuries:	1 Minor
Flight Conducted Under:	Part 91: General Aviation - Positioning		

Analysis

The pilot reported that he was relocating the helicopter from the fueling station to an overnight parking area. He initially attempted to move the helicopter on wheels but was unsuccessful. He then started the helicopter, performed the startup checklist, and applied a "normal amount of collective," but the helicopter rolled to the right and impacted the ground.

The helicopter sustained substantial damage to the fuselage and tailboom.

The automated weather observation station located on the airport reported that, about 16 minutes before the accident, the wind was from 160° at 5 knots.

In a followup conversation with the National Transportation Safety Board investigator-in-charge, the pilot reported that the helicopter began rolling to the right immediately after lifting off and that he added power to increase the altitude and applied left cyclic to counteract the right rolling movement. He estimated that the accident sequence took only seconds.

The Federal Aviation Administration's Helicopter Flying Handbook, FAA-H-8083-21A, contained a section titled, "Normal Takeoffs and Landings," which stated:

Dynamic rollover is possible even during normal takeoffs and landings on relatively level ground, if one wheel or skid is on the ground and thrust (lift) is approximately equal to the weight of the helicopter. If the takeoff or landing is not performed properly, a roll rate could develop around the wheel or skid that is on the ground. When taking off or landing, perform the maneuver smoothly and carefully adjust the cyclic so that no pitch or roll movement rates build up, especially the roll rate. If the bank angle starts to increase to an angle of approximately 5-8°, and full corrective cyclic does not reduce the angle, the collective should be reduced to diminish the unstable rolling condition. Excessive bank angles can also be caused by landing gear caught in a tie down strap, or a tie down strap still attached to one side of the helicopter. Lateral loading imbalance (usually outside published limits) is another contributing factor.

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 lateral control of the helicopter during takeoff, which resulted in dynamic rollover.

Findings

Aircraft	Lateral/bank control - Not attained/maintained (Cause)
Personnel issues	Aircraft control - Pilot (Cause)

Factual Information

History of Flight

Takeoff	Dynamic rollover (Defining event)
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Pilot Information

Certificate:	Private	Age:	62, Male
Airplane Rating(s):	Single-engine Land; Single-engine Sea	Seat Occupied:	Front
Other Aircraft Rating(s):	Helicopter	Restraint Used:	3-point
Instrument Rating(s):	Airplane; Helicopter	Second Pilot Present:	No
Instructor Rating(s):	None	Toxicology Performed:	No
Medical Certification:	Class 3 With Waivers/Limitations	Last FAA Medical Exam:	01/27/2017
Occupational Pilot:	No	Last Flight Review or Equivalent:	02/16/2016
Flight Time:	(Estimated) 1296 hours (Total, all aircraft), 31 hours (Total, this make and model), 1171 hours (Pilot In Command, all aircraft), 30 hours (Last 90 days, all aircraft), 24 hours (Last 30 days, all aircraft), 7 hours (Last 24 hours, all aircraft)		

Aircraft and Owner/Operator Information

Aircraft Make:	ROBINSON HELICOPTER COMPANY	Registration:	N441ML
Model/Series:	R44 II	Aircraft Category:	Helicopter
Year of Manufacture:	2004	Amateur Built:	No
Airworthiness Certificate:	Normal	Serial Number:	10465
Landing Gear Type:	Skid;	Seats:	4
Date/Type of Last Inspection:	10/30/2017, Annual	Certified Max Gross Wt.:	2500 lbs
Time Since Last Inspection:		Engines:	1 Reciprocating
Airframe Total Time:	199.2 Hours as of last inspection	Engine Manufacturer:	LYCOMING
ELT:	Not installed	Engine Model/Series:	IO-540-AE1A5
Registered Owner:	PARATUS AIR INC	Rated Power:	245 hp
Operator:	On file	Operating Certificate(s) Held:	None

Meteorological Information and Flight Plan

Conditions at Accident Site:	Visual Conditions	Condition of Light:	Day
Observation Facility, Elevation:	KVTA, 884 ft msl	Distance from Accident Site:	0 Nautical Miles
Observation Time:	2254 UTC	Direction from Accident Site:	95°
Lowest Cloud Condition:		Visibility	10 Miles
Lowest Ceiling:	Overcast / 6000 ft agl	Visibility (RVR):	
Wind Speed/Gusts:	5 knots /	Turbulence Type Forecast/Actual:	/ None
Wind Direction:	160°	Turbulence Severity Forecast/Actual:	/ N/A
Altimeter Setting:	29.49 inches Hg	Temperature/Dew Point:	-2° C / -12° C
Precipitation and Obscuration:	No Obscuration; No Precipitation		
Departure Point:	WISE, VA (LNP)	Type of Flight Plan Filed:	None
Destination:	Newark, OH (VTA)	Type of Clearance:	None
Departure Time:	1420 EST	Type of Airspace:	Class G

Airport Information

Airport:	NEWARK-HEATH (VTA)	Runway Surface Type:	N/A
Airport Elevation:	883 ft	Runway Surface Condition:	Dry
Runway Used:	N/A	IFR Approach:	None
Runway Length/Width:		VFR Approach/Landing:	None

Wreckage and Impact Information

Crew Injuries:	1 Minor	Aircraft Damage:	Substantial
Passenger Injuries:	N/A	Aircraft Fire:	None
Ground Injuries:	N/A	Aircraft Explosion:	None
Total Injuries:	1 Minor	Latitude, Longitude:	40.023056, -82.463889 (est)

Administrative Information

Investigator In Charge (IIC):	Kathryn R Benhoff	Report Date:	03/27/2018
Additional Participating Persons:	Ken Ramos; FAA; Columbus, OH		
Publish Date:	03/27/2018		
Note:	This accident report documents the factual circumstances of this accident as described to the NTSB.		
Investigation Docket:	http://dms.nts.gov/pubdms/search/dockList.cfm?mKey=96510		

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The Independent Safety Board Act, as codified at 49 U.S.C. Section 1154(b), precludes the admission into evidence or use of any part of an NTSB report related to an incident or accident in a civil action for damages resulting from a matter mentioned in the report. A factual report that may be admissible under 49 U.S.C. § 1154(b) is available [here](#).