



National Transportation Safety Board Aviation Accident Final Report

Location:	Camp Verde, Arizona	Accident Number:	WPR21LA341
Date & Time:	August 27, 2021, 18:30 Local	Registration:	N544SH
Aircraft:	Robinson R44	Aircraft Damage:	Unknown
Defining Event:	Collision during takeoff/land	Injuries:	3 None
Flight Conducted Under:	Part 91: General aviation - Public aircraft - local		

Analysis

The pilot reported that, while taking off from a remote mountainous site, the helicopter encountered some turbulent air and the main rotor RPM decayed. He elected to abort the takeoff and land at a site about 20-30 ft from the original location. During the landing, the main rotor blades struck a tree. The helicopter sustained substantial damage to main rotor blades and main rotor hub assembly. The pilot reported that there were no preaccident mechanical malfunctions or failures with the helicopter that would have precluded normal operation. He also reported that the accident could have been avoided by taking more time to calculate and determine the density altitude and out of ground effect performance of the helicopter at the time of the accident.

Probable Cause and Findings

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

The pilot's inadequate preflight performance calculations which resulted in an aborted takeoff and collision with trees.

Findings

Personnel issues	Decision making/judgment - Pilot
Personnel issues	Performance calculations - Pilot
Environmental issues	High density altitude - Effect on operation
Environmental issues	Mountainous/hilly terrain - Effect on equipment
Environmental issues	Tree(s) - Effect on operation

Factual Information

History of Flight

Landing-flare/touchdown	Collision during takeoff/land (Defining event)
-------------------------	--

Pilot Information

Certificate:	Commercial	Age:	48, Male
Airplane Rating(s):	None	Seat Occupied:	Right
Other Aircraft Rating(s):	Helicopter	Restraint Used:	Unknown
Instrument Rating(s):	None	Second Pilot Present:	No
Instructor Rating(s):	None	Toxicology Performed:	
Medical Certification:	Class 2 Without waivers/limitations	Last FAA Medical Exam:	August 23, 2021
Occupational Pilot:	Yes	Last Flight Review or Equivalent:	August 13, 2020
Flight Time:	971 hours (Total, all aircraft), 968 hours (Total, this make and model), 873 hours (Pilot In Command, all aircraft), 22 hours (Last 90 days, all aircraft), 12 hours (Last 30 days, all aircraft), 6 hours (Last 24 hours, all aircraft)		

Passenger Information

Certificate:	Age:	Male
Airplane Rating(s):	Seat Occupied:	Left
Other Aircraft Rating(s):	Restraint Used:	3-point
Instrument Rating(s):	Second Pilot Present:	No
Instructor Rating(s):	Toxicology Performed:	
Medical Certification:	Last FAA Medical Exam:	
Occupational Pilot:	Last Flight Review or Equivalent:	
Flight Time:		

Passenger Information

Certificate:		Age:	Female
Airplane Rating(s):		Seat Occupied:	Rear
Other Aircraft Rating(s):		Restraint Used:	3-point
Instrument Rating(s):		Second Pilot Present:	No
Instructor Rating(s):		Toxicology Performed:	
Medical Certification:		Last FAA Medical Exam:	
Occupational Pilot:	UNK	Last Flight Review or Equivalent:	
Flight Time:			

Aircraft and Owner/Operator Information

Aircraft Make:	Robinson	Registration:	N544SH
Model/Series:	R44 II	Aircraft Category:	Helicopter
Year of Manufacture:	2005	Amateur Built:	
Airworthiness Certificate:	Normal	Serial Number:	10818
Landing Gear Type:	Skid	Seats:	4
Date/Type of Last Inspection:	August 9, 2021 Annual	Certified Max Gross Wt.:	2500 lbs
Time Since Last Inspection:	12.7 Hrs	Engines:	1 Reciprocating
Airframe Total Time:	3724.6 Hrs as of last inspection	Engine Manufacturer:	Lycoming
ELT:	C91A installed, activated, did not aid in locating accident	Engine Model/Series:	IO-540-AEIA5
Registered Owner:		Rated Power:	260 Horsepower
Operator:		Operating Certificate(s) Held:	None

Meteorological Information and Flight Plan

Conditions at Accident Site:	Visual (VMC)	Condition of Light:	Dusk
Observation Facility, Elevation:	KPRC	Distance from Accident Site:	38 Nautical Miles
Observation Time:	18:30 Local	Direction from Accident Site:	126°
Lowest Cloud Condition:	Clear	Visibility	10 miles
Lowest Ceiling:	None	Visibility (RVR):	
Wind Speed/Gusts:	/	Turbulence Type Forecast/Actual:	None / None
Wind Direction:		Turbulence Severity Forecast/Actual:	N/A / N/A
Altimeter Setting:	29.75 inches Hg	Temperature/Dew Point:	20° C / 10° C
Precipitation and Obscuration:	No Obscuration; No Precipitation		
Departure Point:	Prescott, AZ (KPRC)	Type of Flight Plan Filed:	None
Destination:	Prescott, AZ (KPRC)	Type of Clearance:	VFR
Departure Time:	18:30 Local	Type of Airspace:	Class G

Wreckage and Impact Information

Crew Injuries:	1 None	Aircraft Damage:	Unknown
Passenger Injuries:	2 None	Aircraft Fire:	None
Ground Injuries:		Aircraft Explosion:	None
Total Injuries:	3 None	Latitude, Longitude:	34.296111,-111.79194(est)

Administrative Information

Investigator In Charge (IIC):	Bledsoe, James		
Additional Participating Persons:	Drew Holmes; FSDO; Scottsdale, AZ		
Original Publish Date:	February 18, 2022	Investigation Class:	4
Note:	The NTSB did not travel to the scene of this accident.		
Investigation Docket:	https://data.nts.gov/Docket?ProjectID=103849		

The National Transportation Safety Board (NTSB), established in 1967, is an independent federal agency mandated by Congress through the Independent Safety Board Act of 1974 to investigate transportation accidents, determine the probable causes of the accidents, issue safety recommendations, study transportation safety issues, and evaluate the safety effectiveness of government agencies involved in transportation. The NTSB makes public its actions and decisions through accident reports, safety studies, special investigation reports, safety recommendations, and statistical reviews.

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](#).