



Aviation Investigation Final Report

Location:	MT. VERNON, Ohio	Accident Number:	IAD97LA104
Date & Time:	July 26, 1997, 17:10 Local	Registration:	N35134
Aircraft:	Bell 47G-3B-1	Aircraft Damage:	Substantial
Defining Event:		Injuries:	4 Minor, 3 None
Flight Conducted Under:	Part 91: General aviation		

Analysis

The pilot was flying passengers for 5 minute sightseeing tours. Shortly after departing with two passengers and while at 75 feet AGL, the pilot stated that he experienced an unexplained loss of RPM. The pilot reversed course using right pedal to turn back to the point of departure. While maneuvering to avoid obstacles and with a tailwind, the pilot stated that the rotor RPM further decayed. The helicopter impacted the ground hard, and the main rotor blade severed the tail boom. No mechanical problems were reported by the pilot, nor was any fuel contamination found. A Federal Aviation Administration Inspector started the engine twice without finding any mechanical malfunctions.

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 rotor RPM.

Findings

Occurrence #1: MISCELLANEOUS/OTHER
Phase of Operation: TAKEOFF - INITIAL CLIMB

Findings

1. (C) ROTOR RPM - NOT MAINTAINED - PILOT IN COMMAND

Occurrence #2: FORCED LANDING

Phase of Operation: EMERGENCY DESCENT/LANDING

Occurrence #3: HARD LANDING
Phase of Operation: DESCENT - EMERGENCY

Factual Information

On July 26, 1997, about 1710 eastern daylight time, a Bell 47G-3B-1, N35134, was substantially damaged as it impacted the ground during a forced landing at the Knox County Fairground, Mt. Vernon, Ohio. The certificated commercial pilot and two passengers were not injured. Four people on the ground received minor injuries when struck by flying debris. Visual meteorological conditions prevailed and no flight plan was filed for the sightseeing flight conducted under 14 CFR Part 91.

The pilot was taking passengers for 5 minute flights from the County Fairgrounds. The pilot stated that with two passengers onboard, he reached approximately 75 to 100 feet AGL, when the helicopter experienced "an unexplained loss of RPM." Unable to clear obstacles in his departure path, the pilot initiated a 180 degree right pedal turn back to his point of departure. The pilot stated that obstacles near the landing pad required him to stay high and "a tailwind caused the rotor RPM to further decay." Witnesses stated that the helicopter impacted the ground hard, and the main rotor blades severed the tail boom.

On July 28, 1997, a Federal Aviation Administration (FAA) Inspector examined the wreckage. He stated that the fuel sumps were drained and no signs of contamination was found, and the fuel tank vent passages were unobstructed. The helicopter company's chief pilot stated to the FAA Inspector that the helicopter lost rotor blade power shortly after lift off and out of ground effect, but the pilot did not report any engine malfunction. The Inspector monitored two engine operations, but without rotor engagement due to rotor blade damage sustained during the accident. According to the Inspector, the engine was started twice, and magneto functional checks were performed with a "normal" RPM drop observed each time.

Pilot Information

Certificate:	Commercial	Age:	27, Male
Airplane Rating(s):	Single-engine land	Seat Occupied:	Left
Other Aircraft Rating(s):	Helicopter	Restraint Used:	
Instrument Rating(s):	None	Second Pilot Present:	No
Instructor Rating(s):	None	Toxicology Performed:	No
Medical Certification:	Class 2 Valid Medical--no waivers/lim.	Last FAA Medical Exam:	June 6, 1997
Occupational Pilot:	Yes	Last Flight Review or Equivalent:	
Flight Time:	553 hours (Total, all aircraft), 242 hours (Total, this make and model), 400 hours (Pilot In Command, all aircraft), 130 hours (Last 90 days, all aircraft), 9 hours (Last 24 hours, all aircraft)		

Aircraft and Owner/Operator Information

Aircraft Make:	Bell	Registration:	N35134
Model/Series:	47G-3B-1 47G-3B-1	Aircraft Category:	Helicopter
Year of Manufacture:		Amateur Built:	
Airworthiness Certificate:	Normal	Serial Number:	3591
Landing Gear Type:	Skid	Seats:	3
Date/Type of Last Inspection:	July 1, 1997 Annual	Certified Max Gross Wt.:	2950 lbs
Time Since Last Inspection:	40 Hrs	Engines:	1 Reciprocating
Airframe Total Time:	6971 Hrs	Engine Manufacturer:	Lycoming
ELT:	Not installed	Engine Model/Series:	VO-435-A1F
Registered Owner:	GREEN RIVER AVIATION INC.	Rated Power:	220 Horsepower
Operator:		Operating Certificate(s) Held:	None
Operator Does Business As:		Operator Designator Code:	

Meteorological Information and Flight Plan

Conditions at Accident Site:	Visual (VMC)	Condition of Light:	Day
Observation Facility, Elevation:	MFD ,1297 ft msl	Distance from Accident Site:	30 Nautical Miles
Observation Time:	16:54 Local	Direction from Accident Site:	360°
Lowest Cloud Condition:	Scattered / 3700 ft AGL	Visibility	3.5 miles
Lowest Ceiling:	None	Visibility (RVR):	
Wind Speed/Gusts:	12 knots / 17 knots	Turbulence Type Forecast/Actual:	/
Wind Direction:	230°	Turbulence Severity Forecast/Actual:	/
Altimeter Setting:	29 inches Hg	Temperature/Dew Point:	29°C / 26°C
Precipitation and Obscuration:	N/A - None - Haze		
Departure Point:	KNOX CNTY FAIR , OH (NONE)	Type of Flight Plan Filed:	None
Destination:	(NONE)	Type of Clearance:	None
Departure Time:	17:15 Local	Type of Airspace:	Class G

Airport Information

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

Wreckage and Impact Information

Crew Injuries:	1 None	Aircraft Damage:	Substantial
Passenger Injuries:	2 None	Aircraft Fire:	None
Ground Injuries:	4 Minor	Aircraft Explosion:	None
Total Injuries:	4 Minor, 3 None	Latitude, Longitude:	40.390651,-82.469184(est)

Administrative Information

Investigator In Charge (IIC):	Cain, Jim
Additional Participating Persons:	JAMES E YARBROUGH; COLUMBUS , OH
Original Publish Date:	June 9, 1999
Last Revision Date:	
Investigation Class:	Class
Note:	
Investigation Docket:	https://data.ntsb.gov/Docket?ProjectID=28219

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The NTSB does not assign fault or blame for an accident or incident; rather, as specified by NTSB regulation, “accident/incident investigations are fact-finding proceedings with no formal issues and no adverse parties ... and are not conducted for the purpose of determining the rights or liabilities of any person” (Title 49 *Code of Federal Regulations* section 831.4). Assignment of fault or legal liability is not relevant to the NTSB’s statutory mission to improve transportation safety by investigating accidents and incidents and issuing safety recommendations. In addition, statutory language prohibits the admission into evidence or use of any part of an NTSB report related to an accident in a civil action for damages resulting from a matter mentioned in the report (Title 49 *United States Code* section 1154(b)). A factual report that may be admissible under 49 *United States Code* section 1154(b) is available [here](#).