



Aviation Investigation Final Report

Location:	GOBERNADOR, New Mexico	Accident Number:	DEN88GA088
Date & Time:	March 21, 1988, 10:00 Local	Registration:	N7863S
Aircraft:	BELL 47G-3B1	Aircraft Damage:	Substantial
Defining Event:		Injuries:	1 None
Flight Conducted Under:	Part 91: General aviation		

Analysis

THE COMMERCIAL PLT WAS HOVERING OUT OF GROUND EFFECT AT 40 FEET AGL. DURING A MANEUVER HE REPORTED HEARING A LOUD BANG AND THE ROTOR RPM BEGAN TO DECAY. THE PLT MADE A HOVERING AUTOROTATION RESULTING IN A HARD LANDING. THE MAIN ROTOR STRUCK THE TAIL BOOM AND SEVERED IT. A POST ACCIDENT TRANSMISSION TEAR DOWN REVEALED THAT THE LOCKING ROLLERS IN THE FREE WHEELING UNIT HAD WORN BEYOND TOLERANCE, ALLOWING THE MAIN ROTOR TO BECOME AND REMAIN DISENGAGED FROM THE TRANSMISSION.

Probable Cause and Findings

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

Findings

Occurrence #1: AIRFRAME/COMPONENT/SYSTEM FAILURE/MALFUNCTION

Phase of Operation: HOVER

Findings

1. (C) ROTOR DRIVE SYSTEM,FREEWHEELING SPRAG UNIT - WORN
 2. (C) ROTOR RPM - NOT MAINTAINED - PILOT IN COMMAND
 3. (C) ROTOR DRIVE SYSTEM,FREEWHEELING SPRAG UNIT - DISENGAGED
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Occurrence #2: FORCED LANDING
Phase of Operation: DESCENT - EMERGENCY

Findings

4. AUTOROTATION - ATTEMPTED

Occurrence #3: HARD LANDING
Phase of Operation: LANDING - FLARE/TOUCHDOWN

Findings

5. (F) FLIGHT CONTROLS - IMPROPER USE OF - PILOT IN COMMAND

Factual Information

Pilot Information

Certificate:	Commercial	Age:	49, 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-w/ waivers/lim	Last FAA Medical Exam:	April 13, 1987
Occupational Pilot:	Yes	Last Flight Review or Equivalent:	
Flight Time:	17460 hours (Total, all aircraft), 12147 hours (Total, this make and model), 155 hours (Last 90 days, all aircraft), 1 hours (Last 24 hours, all aircraft)		

Aircraft and Owner/Operator Information

Aircraft Make:	BELL	Registration:	N7863S
Model/Series:	47G-3B1 47G-3B1	Aircraft Category:	Helicopter
Year of Manufacture:		Amateur Built:	
Airworthiness Certificate:	Normal	Serial Number:	6630
Landing Gear Type:	Skid	Seats:	3
Date/Type of Last Inspection:	February 20, 1988 Annual	Certified Max Gross Wt.:	2950 lbs
Time Since Last Inspection:	1 Hrs	Engines:	1 Reciprocating
Airframe Total Time:	5024 Hrs	Engine Manufacturer:	LYCOMING
ELT:	Installed, activated, did not aid in locating accident	Engine Model/Series:	TVO-435-B1A
Registered Owner:	JAMES S. HICKS	Rated Power:	270 Horsepower
Operator:		Operating Certificate(s) Held:	On-demand air taxi (135)
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:		Distance from Accident Site:	
Observation Time:		Direction from Accident Site:	
Lowest Cloud Condition:	Clear	Visibility	50 miles
Lowest Ceiling:	None	Visibility (RVR):	
Wind Speed/Gusts:	/	Turbulence Type Forecast/Actual:	/
Wind Direction:	0°	Turbulence Severity Forecast/Actual:	/
Altimeter Setting:		Temperature/Dew Point:	21°C
Precipitation and Obscuration:	No Obscuration; No Precipitation		
Departure Point:	GOBERNADOR , NM	Type of Flight Plan Filed:	None
Destination:		Type of Clearance:	None
Departure Time:	10:00 Local	Type of Airspace:	Class G

Airport Information

Airport:		Runway Surface Type:	Dirt
Airport Elevation:	0 ft msl	Runway Surface Condition:	Dry
Runway Used:	0	IFR Approach:	None
Runway Length/Width:	0 ft / 0 ft	VFR Approach/Landing:	Forced landing

Wreckage and Impact Information

Crew Injuries:	1 None	Aircraft Damage:	Substantial
Passenger Injuries:		Aircraft Fire:	None
Ground Injuries:	N/A	Aircraft Explosion:	None
Total Injuries:	1 None	Latitude, Longitude:	36.800239,-107.609878(est)

Administrative Information

Investigator In Charge (IIC):	Collins, Robert
Additional Participating Persons:	FLOYD DOCKUM; ALBUQUERQUE , NM RUSSELL E GRAVES; BOISE , ID
Original Publish Date:	April 25, 1989
Last Revision Date:	
Investigation Class:	Class
Note:	
Investigation Docket:	https://data.nts.gov/Docket?ProjectID=17389

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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](#).