



National Transportation Safety Board Aviation Accident Data Summary

Location:	Willcox, AZ	Accident Number:	LAX03LA123
Date & Time:	04/02/2003, 0800 MST	Registration:	N233TR
Aircraft:	Robinson R-44 II	Injuries:	2 None
Flight Conducted Under:	Part 91: General Aviation - Personal		

Analysis

The pilot executed an emergency landing after experiencing a drive belt failure. During cruise flight, the alternator light illuminated and the ammeter showed a drop. The pilot turned off all nonessential electrical equipment. The pilot heard a "thump," which was followed by the smell of burnt rubber. About 15 seconds later, the clutch light illuminated and the pilot heard a "thud." The pilot lowered the collective and both lights continued to illuminate. The pilot then entered an autorotation and pulled the clutch circuit breaker. As the helicopter settled from the flare, it contacted a "clump" of dirt. The helicopter tipped forward, which bent the forward portion of the skids, and resulted in the main rotor striking the tail boom. No preimpact anomalies with either the airframe or engine were discovered. The main rotor drive belts were found in the drive compartment in a shredded condition. The alternator belt was not recovered.

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Probable Cause

The National Transportation Safety Board determines the probable cause(s) of this accident to be:
The failure of the alternator belt which resulted in the failure of the main drive belt.

Findings

Occurrence #1: AIRFRAME/COMPONENT/SYSTEM FAILURE/MALFUNCTION
Phase of Operation: CRUISE

Findings

1. (C) ELECTRICAL SYSTEM,DRIVE/BELT - FAILURE
2. (C) ROTOR DRIVE SYSTEM,MAIN ROTOR DRIVE BELT - FOREIGN OBJECT DAMAGE
3. (C) ROTOR DRIVE SYSTEM,MAIN ROTOR DRIVE BELT - FAILURE

Occurrence #2: FORCED LANDING

Phase of Operation: DESCENT - EMERGENCY

Findings

4. AUTOROTATION - INITIATED - PILOT IN COMMAND

Occurrence #3: IN FLIGHT COLLISION WITH TERRAIN/WATER

Phase of Operation: EMERGENCY DESCENT/LANDING

Findings

5. (F) TERRAIN CONDITION - DIRT BANK/RISING EMBANKMENT

Pilot Information

Certificate:	Flight Instructor; Commercial	Age:	36
Airplane Rating(s):	None	Instrument Rating(s):	None
Other Aircraft Rating(s):	Helicopter	Instructor Rating(s):	Helicopter
Flight Time:	704 hours (Total, all aircraft), 286 hours (Total, this make and model), 654 hours (Pilot In Command, all aircraft), 65 hours (Last 90 days, all aircraft), 31 hours (Last 30 days, all aircraft), 4 hours (Last 24 hours, all aircraft)		

Student Pilot Information

Certificate:	Private	Age:	51
Airplane Rating(s):	None	Instrument Rating(s):	None
Other Aircraft Rating(s):	Helicopter	Instructor Rating(s):	None
Flight Time:	75 hours (Total, all aircraft), 38 hours (Total, this make and model), 22 hours (Pilot In Command, all aircraft), 19 hours (Last 90 days, all aircraft), 6 hours (Last 30 days, all aircraft), 5 hours (Last 24 hours, all aircraft)		

Aircraft and Owner/Operator Information

Aircraft Make:	Robinson	Registration:	N233TR
Model/Series:	R-44 II	Engines:	1 Reciprocating
Operator:	Thomas Hughes	Engine Manufacturer:	Lycoming
Operating Certificate(s) Held:	None	Engine Model/Series:	HIO-540
Flight Conducted Under:	Part 91: General Aviation - Personal		

Meteorological Information and Flight Plan

Conditions at Accident Site:	Visual Conditions	Condition of Light:	Day
Observation Facility, Elevation:	KTUS, 2643 ft msl	Weather Information Source:	Weather Observation Facility
Lowest Ceiling:	None	Wind Speed/Gusts, Direction:	13 knots / 18 knots, 180°
Temperature:	20° C	Visibility	10 Miles
Precipitation and Obscuration:			
Departure Point:	Tucson, AZ (KTUS)	Destination:	St Louis, MO (KSTL)

Wreckage and Impact Information

Crew Injuries:	1 None	Aircraft Damage:	Substantial
Passenger Injuries:	1 None	Aircraft Fire:	None
Ground Injuries:	N/A	Aircraft Explosion:	None
Latitude, Longitude:	32.245278, -109.894722		

Administrative Information

Investigator In Charge (IIC):	Van S McKenny	Adopted Date:	09/01/2004
Investigation Docket:	NTSB accident and incident docket serve as permanent archival information for the NTSB's investigations. Dockets released prior to June 1, 2009 are publicly available from the NTSB's Record Management Division at pubinq@ntsb.gov , or at 800-877-6799. Dockets released after this date are available at http://dms.nts.gov/pubdms/ .		

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