



National Transportation Safety Board Aviation Accident Factual Report

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

On April 2, 2003, about 0800 mountain standard time, a Robinson R-44 II, N233TR, collided with terrain during an autorotative forced landing after experiencing a drive belt failure near Willcox, Arizona. The owner was operating the helicopter under the provisions of 14 CFR Part 91. The helicopter sustained substantial damage. The commercial pilot and one passenger were not injured. The cross-country ferry flight departed Tucson, Arizona, about 0700, en route to St. Louis, Missouri. Day visual meteorological conditions prevailed, and no flight plan had been filed.

In a telephone interview with the National Transportation Safety Board investigator, the pilot reported that the purpose of the flight was to fly the newly purchased helicopter to St. Louis. The new owner accompanied the pilot. The pilot stated that he was acting as pilot-in-command for the flight because of the new owner's limited flight time in the make and model.

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 the main rotor struck the tail boom.

The Safety Board investigator and a representative from the helicopter's manufacturer examined the helicopter at Robinson Helicopter Company, Torrance, California. No preimpact anomalies with either the airframe or engine were discovered. The main drive belts were located in the drive compartment around the engine main rotor drive, forward of the drive pulley. The belts exhibited shredding. The position of the adjustment bolt and the adjustment slot on the alternator were measured and compared to positions on similar helicopters. The measurements were consistent with recommended positions by the manufacturer. The aft plate on the alternator exhibited rub marks in a circular pattern, outside of the path of pulley rotation. The alternator belt was not recovered.

In a telephone conversation with the Safety Board investigator, the Robinson representative stated that the cooling fan on the helicopter pulls air over the top of the engine and that air is then released as it blows aft, over the bottom of the engine. The alternator is positioned in the path of the outward airflow.

Pilot Information

Certificate:	Flight Instructor; Commercial	Age:	36, Male
Airplane Rating(s):	None	Seat Occupied:	Left
Other Aircraft Rating(s):	Helicopter	Restraint Used:	Seatbelt, Shoulder harness
Instrument Rating(s):	None	Second Pilot Present:	Yes
Instructor Rating(s):	Helicopter	Toxicology Performed:	No
Medical Certification:	Class 2 Valid Medical--no waivers/lim.	Last FAA Medical Exam:	03/27/2002
Occupational Pilot:		Last Flight Review or Equivalent:	10/15/2001
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, Male
Airplane Rating(s):	None	Seat Occupied:	Right
Other Aircraft Rating(s):	Helicopter	Restraint Used:	Seatbelt, Shoulder harness
Instrument Rating(s):	None	Second Pilot Present:	Yes
Instructor Rating(s):	None	Toxicology Performed:	No
Medical Certification:	Class 3 Valid Medical--w/ waivers/lim.	Last FAA Medical Exam:	01/22/2002
Occupational Pilot:		Last Flight Review or Equivalent:	11/20/2002
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	Aircraft Category:	Helicopter
Year of Manufacture:		Amateur Built:	No
Airworthiness Certificate:	Normal	Serial Number:	10062
Landing Gear Type:	Skid	Seats:	4
Date/Type of Last Inspection:	AAIP	Certified Max Gross Wt.:	2500 lbs
Time Since Last Inspection:	10.5 Hours	Engines:	1 Reciprocating
Airframe Total Time:	10.5 Hours	Engine Manufacturer:	Lycoming
ELT:	Installed, activated, did not aid in locating accident	Engine Model/Series:	HIO-540
Registered Owner:	Tamiry Aviation LLC	Rated Power:	205 hp
Operator:	Thomas Hughes	Operating Certificate(s) Held:	None

Meteorological Information and Flight Plan

Conditions at Accident Site:	Visual Conditions	Condition of Light:	Day
Observation Facility, Elevation:	KTUS, 2643 ft msl	Distance from Accident Site:	57 Nautical Miles
Observation Time:	0755 MST	Direction from Accident Site:	270°
Lowest Cloud Condition:	Clear	Visibility	10 Miles
Lowest Ceiling:	None	Visibility (RVR):	
Wind Speed/Gusts:	13 knots / 18 knots	Turbulence Type Forecast/Actual:	/
Wind Direction:	180°	Turbulence Severity Forecast/Actual:	/
Altimeter Setting:	29.94 inches Hg	Temperature/Dew Point:	20° C / 8° C
Precipitation and Obscuration:			
Departure Point:	Tucson, AZ (KTUS)	Type of Flight Plan Filed:	None
Destination:	St Louis, MO (KSTL)	Type of Clearance:	None
Departure Time:	0700 MST	Type of Airspace:	Class G

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
Total Injuries:	2 None	Latitude, Longitude:	32.245278, -109.894722

Administrative Information

Investigator In Charge (IIC):	Van S McKenny
Additional Participating Persons:	Ken Martin; Robinson Helicopter Company; Torrance, CA John Eller; Federal Aviation Administration; Scottsdale, AZ
Investigation Docket:	NTSB accident and incident dockets 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/ .