



National Transportation Safety Board Aviation Accident Data Summary

Location:	Casa Grande, AZ	Accident Number:	LAX05LA060
Date & Time:	01/03/2005, 1346 MST	Registration:	N135NW
Aircraft:	Eurocopter France EC135T1	Injuries:	1 Minor, 1 None
Flight Conducted Under:	Part 91: General Aviation - Instructional - Air Medical (Unspecified)		

Analysis

Following the in-flight separation of a main rotor control link, the pilots lost control and the helicopter hit the ground hard and rolled over. The pilots reported that as they turned base in the traffic pattern for landing at the airport, the helicopter pitched up violently and rolled to the right, followed by a hard roll to the left. Both pilots got on the controls and tried to regain control of the helicopter. The pilots lowered the collective and started down for a landing. During the descent, the pitching and rolling continued intermittently with the roll attitude reaching beyond 60 degrees. As the helicopter neared the ground, the pilots flared and the helicopter hit the ground in a tail low attitude and rolled over. A post accident examination of the helicopter, and examination of maintenance records by a Federal Aviation Administration inspector, occurred on site and after recovery. During the course of the examination it was determined that maintenance personnel had removed cyclic control links from the cyclic control levers to check the ball joints for excess free play during an inspection. The links are attached to the cyclic levers with bolts and castle nuts with cotter pins through the castle nuts as a safety locking device. The right lateral cyclic control link was found broken. The nut on the upper bolt was 1/4-inch away from the side of the attachment point. There was no evidence of the cotter pins having been added to the castle nuts after the link inspection/reinstallation.

Probable Cause

The National Transportation Safety Board determines the probable cause(s) of this accident to be: the separation of a main rotor control link due to improper maintenance installation.

Findings

Occurrence #1: LOSS OF CONTROL - IN FLIGHT
Phase of Operation: MANEUVERING

Findings

1. (C) ROTORCRAFT FLIGHT CONTROL, CYCLIC CONTROL ROD - NOT SAFETIED
2. (C) MAINTENANCE, INSTALLATION - IMPROPER - COMPANY MAINTENANCE PERSONNEL
3. (C) AIRCRAFT CONTROL - DIMINISHED

Occurrence #2: IN FLIGHT COLLISION WITH TERRAIN/WATER
Phase of Operation: DESCENT - UNCONTROLLED

Findings

4. TERRAIN CONDITION - GROUND

Check Pilot Information

Certificate:	Flight Instructor; Commercial	Age:	51
Airplane Rating(s):	Single-engine Land	Instrument Rating(s):	Helicopter
Other Aircraft Rating(s):	Helicopter	Instructor Rating(s):	Helicopter; Instrument Helicopter
Flight Time:	14000 hours (Total, all aircraft), 150 hours (Total, this make and model), 13500 hours (Pilot In Command, all aircraft), 100 hours (Last 90 days, all aircraft), 30 hours (Last 30 days, all aircraft), 2 hours (Last 24 hours, all aircraft)		

Pilot Information

Certificate:	Airline Transport; Commercial	Age:	63
Airplane Rating(s):	Multi-engine Land; Single-engine Land	Instrument Rating(s):	Airplane; Helicopter
Other Aircraft Rating(s):	Helicopter	Instructor Rating(s):	None
Flight Time:	10500 hours (Total, all aircraft), 150 hours (Total, this make and model), 9500 hours (Pilot In Command, all aircraft), 36 hours (Last 90 days, all aircraft), 10 hours (Last 30 days, all aircraft), 1 hours (Last 24 hours, all aircraft)		

Aircraft and Owner/Operator Information

Aircraft Make:	Eurocopter France	Registration:	N135NW
Model/Series:	EC135T1	Engines:	2 Turbo Shaft
Operator:	Omni Flight Helicopters, Inc.	Engine Manufacturer:	Turbomeca
Operating Certificate(s) Held:	On-demand Air Taxi (135)	Engine Model/Series:	Arris 2B1
Flight Conducted Under:	Part 91: General Aviation - Instructional - Air Medical (Unspecified)		

Meteorological Information and Flight Plan

Conditions at Accident Site:	Visual Conditions	Condition of Light:	Day
Observation Facility, Elevation:	PHX, 1133 ft msl	Weather Information Source:	Weather Observation Facility
Lowest Ceiling:	Overcast / 5500 ft agl	Wind Speed/Gusts, Direction:	5 knots / , 210°
Temperature:	13°C	Visibility	7 Miles
Precipitation and Obscuration:	No Obscuration; No Precipitation		
Departure Point:	Mesa, AZ (IWA)	Destination:	Casa Grande, AZ (CGZ)

Wreckage and Impact Information

Crew Injuries:	1 Minor, 1 None	Aircraft Damage:	Substantial
Passenger Injuries:	N/A	Aircraft Fire:	None
Ground Injuries:	N/A	Aircraft Explosion:	None
Latitude, Longitude:	32.954722, -111.766944		

Administrative Information

Investigator In Charge (IIC): George E Petterson

Adopted Date: 02/28/2006

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/>.

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