



National Transportation Safety Board Aviation Accident Final Report

Location:	Corpus Christi, TX	Accident Number:	CEN12LA228
Date & Time:	04/03/2012, 1555 CDT	Registration:	N3042D
Aircraft:	ENSTROM 280FX	Aircraft Damage:	Substantial
Defining Event:	Sys/Comp malf/fail (non-power)	Injuries:	1 Minor, 1 None
Flight Conducted Under:	Part 91: General Aviation - Other Work Use		

Analysis

After an uneventful flight, the pilot slowed the helicopter into a stable hover about 15 feet above the landing point. Although the engine continued to operate, the main rotor rpm suddenly decayed and the helicopter landed hard. The pilot, who had over 5,600 flight hours in helicopters, stated that there was no warning before the loss of main rotor drive. The helicopter was in a position whereby power to the rotor system was essential to conducting a safe landing. Examination of the helicopter revealed that the bolt that retains the clutch drive rod end in the clutch pivot fork had sheared, resulting in the clutch disengaging. Once the clutch disengaged, there was no drive to the rotor system, and the helicopter's descent could not be arrested. With the exception of the failed bolt, examination of the entire drive system did not show any preexisting mechanical malfunction or abnormalities that would have precluded normal operation. The helicopter had operated about 1,350 hours since it was new, and the retaining bolt was the original installation. The reason for the failure of the bolt could not be determined.

Probable Cause and Findings

The National Transportation Safety Board determines the probable cause(s) of this accident to be: The failure of the bolt that retained the clutch drive rod end, which resulted in a loss of main rotor drive and a subsequent hard landing.

Findings

Aircraft	Engine/transmission coupling - Failure (Cause)
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Factual Information

On April 3, 2012, approximately 1555 central daylight time, an Enstrom 280FX helicopter, N3042D, registered to Travland Helicopters Intl INC., of Alpine, Texas, was substantially damaged during a hard landing after a loss of power at the Corpus Christie Airport (CRP), Corpus Christie, Texas. The commercial pilot received minor injuries and his passenger was not injured. Visual meteorological conditions prevailed and a flight plan was not filed for the flight. The business flight was conducted under the provisions of 14 Code of Federal Regulations Part 91. The flight originated from Edinburg, Texas, and Corpus Christie was its intended destination.

After an uneventful flight from Edinburg, Texas, and set up for landing at CRP, the pilot slowed the helicopter into a stable hover about 15 feet above the landing point, the rotor RPM suddenly decayed and the helicopter landed hard, resulting in substantial damage to the tailboom. The pilot, who had over 5,600 flight hours in helicopters, stated that there was no warning prior to the loss of main rotor drive. The helicopter was in a position whereby power to the rotor system was essential to effect a safe landing.

Examination of the helicopter by an FAA inspector revealed that the bolt that retains the clutch drive rod end in the clutch pivot fork had sheared. The ears of the pivot fork were worn on the inside, but not bent. The rod end to the clutch drive was not bent. The bolt was elongated and the pivot fork bushing was worn. The head of the bolt was not found. Examination of the entire drive system did not show any preexisting mechanical malfunction or abnormalities. The bolt was the proper hardware for the installation. The helicopter had about 1,350 hours since it was new, and the retaining bolt was the original installation.

History of Flight

Approach	Sys/Comp malf/fail (non-power) (Defining event)
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Pilot Information

Certificate:	Flight Instructor; Commercial	Age:	68, Male
Airplane Rating(s):	Multi-engine Land; Single-engine Land	Seat Occupied:	Left
Other Aircraft Rating(s):	Helicopter	Restraint Used:	Seatbelt, Shoulder harness
Instrument Rating(s):	Airplane; Helicopter	Second Pilot Present:	No
Instructor Rating(s):	Airplane Multi-engine; Airplane Single-engine; Helicopter; Instrument Airplane	Toxicology Performed:	No
Medical Certification:	Class 2 With Waivers/Limitations	Last Medical Exam:	08/01/2011
Occupational Pilot:	Yes	Last Flight Review or Equivalent:	06/01/2011
Flight Time:	18000 hours (Total, all aircraft), 200 hours (Last 90 days, all aircraft), 100 hours (Last 30 days, all aircraft), 14 hours (Last 24 hours, all aircraft)		

Aircraft and Owner/Operator Information

Aircraft Manufacturer:	ENSTROM	Registration:	N3042D
Model/Series:	280FX	Aircraft Category:	Helicopter
Year of Manufacture:		Amateur Built:	No
Airworthiness Certificate:		Serial Number:	2128
Landing Gear Type:		Seats:	3
Date/Type of Last Inspection:	01/12/2012, Annual	Certified Max Gross Wt.:	
Time Since Last Inspection:		Engines:	1 Reciprocating
Airframe Total Time:	1350 Hours	Engine Manufacturer:	LYCOMING
ELT:	Installed, not activated	Engine Model/Series:	HIO-360-F1AD
Registered Owner:	TRAVLAND HELICOPTERS INTL INC	Rated Power:	190 hp
Operator:	TRAVLAND HELICOPTERS INTL INC	Air Carrier Operating Certificate:	None

Meteorological Information and Flight Plan

Observation Facility, Elevation:	CRP, 44 ft msl	Observation Time:	1515 CDT
Distance from Accident Site:		Condition of Light:	Day
Direction from Accident Site:		Conditions at Accident Site:	Visual Conditions
Lowest Cloud Condition:	Clear	Temperature/Dew Point:	29° C / 22° C
Lowest Ceiling:	Broken / 3600 ft agl	Visibility	7 Miles
Wind Speed/Gusts, Direction:	7 knots, 160°	Visibility (RVR):	
Altimeter Setting:	29.9 inches Hg	Visibility (RVV):	
Precipitation and Obscuration:			
Departure Point:	Edinburg, TX (EBG)	Type of Flight Plan Filed:	None
Destination:	Corpus Christi, TX (CRP)	Type of Clearance:	None
Departure Time:	1630 CDT	Type of Airspace:	

Airport Information

Airport:	Corpus Christie (CRP)	Runway Surface Type:	
Airport Elevation:	44 ft	Runway Surface Condition:	
Runway Used:	N/A	IFR Approach:	None
Runway Length/Width:		VFR Approach/Landing:	Full Stop; Straight-in

Wreckage and Impact Information

Crew Injuries:	1 Minor	Aircraft Damage:	Substantial
Passenger Injuries:	1 None	Aircraft Fire:	None
Ground Injuries:	N/A	Aircraft Explosion:	None
Total Injuries:	1 Minor, 1 None		

Administrative Information

Investigator In Charge (IIC): Alexander Lemishko **Adopted Date:** 09/12/2013

Additional Participating Persons: Carlos F Gallardo; FAA FSDO San Antonio; San Antonio, TX

Publish Date: 09/12/2013

Investigation Docket: <http://dms.nts.gov/pubdms/search/dockList.cfm?mKey=83305>

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