



Aviation Investigation Final Report

Location:	New Century, Kansas	Accident Number:	DEN08LA038
Date & Time:	November 13, 2007, 10:30 Local	Registration:	N46110
Aircraft:	Rotorway Exec 162-F	Aircraft Damage:	Substantial
Defining Event:		Injuries:	1 None
Flight Conducted Under:	Part 91: General aviation - Personal		

Analysis

The pilot was doing hovering maneuvers at the end of the runway. He was cleared for a left pattern to return to the end of the runway. On final approach he felt a "moderate vibration" in the tail rotor, and elected to autorotate to a farm field adjacent to airport property rather than try to clear surrounding trees and fences. The helicopter landed hard, flexing the landing gear. The pilot later reported a spar in one of the tail rotor blades had failed due to metal fatigue.

Probable Cause and Findings

The National Transportation Safety Board determines the probable cause(s) of this accident to be: While on approach the tail rotor spar failed due to metal fatigue .

Findings

Occurrence #1: AIRFRAME/COMPONENT/SYSTEM FAILURE/MALFUNCTION
Phase of Operation: APPROACH - VFR PATTERN - FINAL APPROACH

Findings

1. ROTOR SYSTEM, TAIL ROTOR BLADE SPAR - VIBRATION
2. (C) ROTOR SYSTEM, TAIL ROTOR BLADE SPAR - FATIGUE
3. (C) ROTOR SYSTEM, TAIL ROTOR BLADE SPAR - FAILURE, TOTAL

Occurrence #2: FORCED LANDING
Phase of Operation: DESCENT - EMERGENCY

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

Findings
4. TERRAIN CONDITION - OPEN FIELD

Factual Information

On November 13, 2007, at 0912 central standard time, a Rotorway Exec 162-F, N46110, registered to and operated by the pilot, was substantially damaged when it impacted terrain during an off-airport landing while on approach to New Century Aircenter (IXD), New Century, Kansas. Visual meteorological conditions prevailed at the time of the accident. The personal flight was being conducted under the provisions of Title 14 CFR Part 91 without a flight plan. The pilot, the sole occupant on board, was not injured. The local flight had just originated.

According to the pilot's accident report, he was doing hovering maneuvers at the end of runway 22, He was cleared for a left pattern to return to the end of the runway. On final approach he felt a "moderate vibration" in the tail rotor, and elected to autorotate to a farm field adjacent to airport property rather than try to clear surrounding trees and fences. The helicopter landed hard, flexing the landing gear.

On January 25, 2008, the pilot was interviewed via telephone. He said a spar in the tail rotor blade had failed due to metal fatigue.

Pilot Information

Certificate:	Private	Age:	52, Male
Airplane Rating(s):	None	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 3 With waivers/limitations	Last FAA Medical Exam:	September 1, 2006
Occupational Pilot:	No	Last Flight Review or Equivalent:	
Flight Time:	200 hours (Total, all aircraft), 200 hours (Total, this make and model)		

Aircraft and Owner/Operator Information

Aircraft Make:	Rotorway	Registration:	N46110
Model/Series:	Exec 162-F	Aircraft Category:	Helicopter
Year of Manufacture:		Amateur Built:	Yes
Airworthiness Certificate:	Experimental (Special)	Serial Number:	6850
Landing Gear Type:	Skid	Seats:	2
Date/Type of Last Inspection:	November 1, 2007 Condition	Certified Max Gross Wt.:	2035 lbs
Time Since Last Inspection:	127 Hrs	Engines:	1 Reciprocating
Airframe Total Time:	127 Hrs at time of accident	Engine Manufacturer:	
ELT:	Not installed	Engine Model/Series:	
Registered Owner:	Donald B. Eikel	Rated Power:	146 Horsepower
Operator:		Operating Certificate(s) Held:	None

Meteorological Information and Flight Plan

Conditions at Accident Site:	Visual (VMC)	Condition of Light:	Day
Observation Facility, Elevation:	IXD,1087 ft msl	Distance from Accident Site:	
Observation Time:	08:53 Local	Direction from Accident Site:	
Lowest Cloud Condition:	Clear	Visibility	10 miles
Lowest Ceiling:	None	Visibility (RVR):	
Wind Speed/Gusts:	5 knots /	Turbulence Type Forecast/Actual:	/
Wind Direction:	140°	Turbulence Severity Forecast/Actual:	/
Altimeter Setting:	30.02 inches Hg	Temperature/Dew Point:	9°C / 1°C
Precipitation and Obscuration:	No Obscuration; No Precipitation		
Departure Point:	New Century, KS (IXD)	Type of Flight Plan Filed:	None
Destination:	New Century, KS (IXD)	Type of Clearance:	None
Departure Time:	10:00 Local	Type of Airspace:	

Airport Information

Airport:	New Century Aircenter IXD	Runway Surface Type:	Asphalt
Airport Elevation:	1087 ft msl	Runway Surface Condition:	Dry
Runway Used:	22	IFR Approach:	Unknown
Runway Length/Width:	5130 ft / 100 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:	38.830833,-94.890274

Administrative Information

Investigator In Charge (IIC):	Scott, Arnold
Additional Participating Persons:	Marvin L Moore; FAA Flight Standards District Office; Kansas City, KS
Original Publish Date:	April 30, 2008
Last Revision Date:	
Investigation Class:	Class
Note:	
Investigation Docket:	https://data.ntsb.gov/Docket?ProjectID=67201

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