



Aviation Investigation Factual Report

Location:	Smoketown, Pennsylvania	Accident Number:	ERA12LA373
Date & Time:	May 30, 2012, 20:10 Local	Registration:	N8707E
Aircraft:	FALTIN JOHN R ROTORWAY EXEC 162F	Aircraft Damage:	Substantial
Defining Event:	Loss of control in flight	Injuries:	1 Minor
Flight Conducted Under:	Part 91: General aviation - Personal		

Factual Information

On May 30, 2012, about 2010 eastern daylight time, an experimental amateur-built Rotorway Exec 162F, N8707E, was substantially damaged during a hard landing at Smoketown Airport (S37), Smoketown, Pennsylvania. The commercial pilot/owner/builder of the helicopter incurred minor injuries. Visual meteorological conditions prevailed, and no flight plan was filed for the local flight. The personal flight was conducted under the provisions of Title 14 Code of Federal Regulations Part 91.

According to the pilot, he had recently finished performing maintenance on the helicopter, which included tracking its rotor system following removal of the main rotor blades. He then positioned the helicopter in front of his hangar and proceeded to perform an operational check before attempting to hover the helicopter. Immediately upon entering the hover, the pilot felt a large amount of vibration in the cyclic control and the helicopter began moving to the left. The pilot pushed the cyclic control right in an effort to stop the left movement of the helicopter, but the control input was ineffective. The pilot then climbed the helicopter to avoid a collision with several nearby posts and the hangar, and attempted to maneuver to an open grass area. Realizing that the rotor rpm had decayed, he reduced the collective pitch and increased engine power. The helicopter then entered "settling with power" and impacted a taxiway located between two hangars.

Federal Aviation Administration inspectors examined the helicopter following the accident. During the examination the inspectors found that the helicopter's tubular steel frame had fractured in two locations. Each location was the site of a weld repair, which according to the pilot, were performed following a previous hard landing in 2006. The inspectors also found that the cyclic control cross tube had disconnected from its pivot point on the left side of the fuselage frame, just aft of one of the previously observed separations in the frame. The inspectors reported no other evidence of any pre-impact mechanical malfunctions or failures.

The portions of the tubular frame encompassing the fractures were sectioned from the wreckage and forwarded to the NTSB Materials Laboratory for detailed examination. The first two halves of tubular frame pieces examined were located adjacent to the left front skid attachment point. The tube pieces exhibited a branched circumferential fracture that followed several external porous weld deposits, arc strikes, areas of burn-through, and two cross-drilled holes. The tube weldment exhibited fracture features consistent with a failure in bending overstress.

The second set of structural tubing was recovered from the engine mount area, and was fractured through the fillet weld deposit where a square tube was joined to a round tube. The thermal discoloration of the paint and the morphology of the weld deposit in the vicinity of the fracture were consistent with weld deposit overlay over an existing fillet weld. The weld deposit in the region of the fracture exhibited undercut, incomplete fusion, overlap, insufficient throat, burn-through, and poor fillet formation. The fracture of the weld exhibited features consistent with failure due to bending overstress.

During a telephone interview conducted by a Federal Aviation Administration (FAA) inspector several weeks after the accident, the pilot stated that he believed that the loss of control that had precipitated the

accident was due to improper main rotor blade tracking, and specifically, related to the method of leveling the blades he had utilized during the helicopter's most recent maintenance.

Pilot Information

Certificate:	Private	Age:	62
Airplane Rating(s):	None	Seat Occupied:	Left
Other Aircraft Rating(s):	Helicopter	Restraint Used:	Unknown
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:	July 13, 2010
Occupational Pilot:	No	Last Flight Review or Equivalent:	September 11, 2010
Flight Time:	159 hours (Total, all aircraft), 100 hours (Total, this make and model)		

Aircraft and Owner/Operator Information

Aircraft Make:	FALTIN JOHN R	Registration:	N8707E
Model/Series:	ROTORWAY EXEC 162F	Aircraft Category:	Helicopter
Year of Manufacture:	2006	Amateur Built:	Yes
Airworthiness Certificate:	Experimental (Special)	Serial Number:	F6203
Landing Gear Type:	Skid	Seats:	2
Date/Type of Last Inspection:	December 6, 2011 Condition	Certified Max Gross Wt.:	1450 lbs
Time Since Last Inspection:		Engines:	1 Reciprocating
Airframe Total Time:	200 Hrs	Engine Manufacturer:	Rotorway International
ELT:	Installed, not activated	Engine Model/Series:	RI 162F
Registered Owner:	On file	Rated Power:	150 Horsepower
Operator:	On file	Operating Certificate(s) Held:	None

Meteorological Information and Flight Plan

Conditions at Accident Site:	Visual (VMC)	Condition of Light:	Day
Observation Facility, Elevation:	LNS,403 ft msl	Distance from Accident Site:	6 Nautical Miles
Observation Time:	19:53 Local	Direction from Accident Site:	330°
Lowest Cloud Condition:	Clear	Visibility	10 miles
Lowest Ceiling:	None	Visibility (RVR):	
Wind Speed/Gusts:	4 knots / None	Turbulence Type Forecast/Actual:	/
Wind Direction:	210°	Turbulence Severity Forecast/Actual:	/
Altimeter Setting:	29.72 inches Hg	Temperature/Dew Point:	24°C / 16°C
Precipitation and Obscuration:	No Obscuration; No Precipitation		
Departure Point:	Smoketown, PA (S37)	Type of Flight Plan Filed:	None
Destination:	Smoketown, PA (S37)	Type of Clearance:	None
Departure Time:	20:10 Local	Type of Airspace:	

Airport Information

Airport:	Smoketown Airport S37	Runway Surface Type:	
Airport Elevation:	370 ft msl	Runway Surface Condition:	
Runway Used:		IFR Approach:	None
Runway Length/Width:		VFR Approach/Landing:	None

Wreckage and Impact Information

Crew Injuries:	1 Minor	Aircraft Damage:	Substantial
Passenger Injuries:		Aircraft Fire:	None
Ground Injuries:	N/A	Aircraft Explosion:	None
Total Injuries:	1 Minor	Latitude, Longitude:	40.04,-76.201667(est)

Administrative Information

Investigator In Charge (IIC): Diaz, Dennis

Additional Participating Persons: Ronald A Forsyth; FAA/FSDO; Harrisburg, PA

Report Date: February 4, 2014

Last Revision Date:

Investigation Class: [Class](#)

Note:

Investigation Docket: <https://data.nts.gov/Docket?ProjectID=83806>

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The NTSB does not assign fault or blame for an accident or incident; rather, as specified by NTSB regulation, “accident/incident investigations are fact-finding proceedings with no formal issues and no adverse parties ... and are not conducted for the purpose of determining the rights or liabilities of any person” (Title 49 *Code of Federal Regulations* section 831.4). Assignment of fault or legal liability is not relevant to the NTSB’s statutory mission to improve transportation safety by investigating accidents and incidents and issuing safety recommendations. In addition, statutory language prohibits the admission into evidence or use of any part of an NTSB report related to an accident in a civil action for damages resulting from a matter mentioned in the report (Title 49 *United States Code* section 1154(b)). A factual report that may be admissible under 49 *United States Code* section 1154(b) is available [here](#).