



Aviation Investigation Final Report

Location:	Tulsa, Oklahoma	Accident Number:	CEN13LA155
Date & Time:	February 6, 2013, 17:50 Local	Registration:	N276RC
Aircraft:	ROBINSON HELICOPTER COMPANY R44 II	Aircraft Damage:	Substantial
Defining Event:	Aircraft servicing event	Injuries:	1 None
Flight Conducted Under:	Part 91: General aviation		

Analysis

After fuel servicing, the line technician did not remove the rubber fueling mat from the fuselage. The pilot did not observe the mat on the fuselage before taking off, most likely due to his inadequate preflight inspection of the helicopter. While climbing through 150 feet above ground level, the fueling mat departed the fuselage and impacted the tail rotor, which resulted in the fracture of both tail rotor blades and a loss of tail rotor control. The pilot executed an autorotation landing and landed without further incident.

Probable Cause and Findings

The National Transportation Safety Board determines the probable cause(s) of this accident to be: The line technician’s failure to remove the refueling mat from the helicopter fuselage following servicing, which resulted in the mat striking the tail rotor in flight, and the pilot’s inadequate preflight inspection.

Findings

Personnel issues	Preflight inspection - Pilot
Aircraft	Tail rotor blade - Damaged/degraded
Personnel issues	Forgotten action/omission - Ground crew

Factual Information

History of Flight

Prior to flight	Aircraft servicing event (Defining event)
Initial climb	Sys/Comp malf/fail (non-power)
Initial climb	Loss of control in flight
Autorotation	Off-field or emergency landing

On February 6, 2013, about 1750 central standard time, a Robinson R44 II helicopter, N276RC, executed an autorotation landing after a fueling mat struck the tail rotor at the Tulsa International Airport (TUL), Tulsa, Oklahoma. The commercial pilot was not injured. The tail rotor blades received substantial damage. The airplane was registered to and operated by Crumpton Aviation LLC under the provisions of 14 Code of Federal Regulations Part 91 as a business flight. Night visual meteorological conditions prevailed for the flight and no flight plan was filed. The flight was originating at the time of the accident and was destined for Richard Lloyd Jones Jr. Airport (KRVS), Tulsa, Oklahoma.

After fuel servicing by fixed base operator personnel, the pilot lifted off from the ramp area and began a turn to the southwest. Climbing through 150 feet above ground level, the pilot reported a loud bang followed by loss of tail rotor effectiveness. The pilot executed an autorotation landing on a concrete ramp at the airport.

During examination of the accident site, two fractured tail rotor blades and a damaged fueling mat were found on a path between the initial liftoff point of the helicopter and its landing location. Examination of the tail rotor blades indicated that damage was consistent with contact by the fueling mat.

Pilot Information

Certificate:	Commercial; Flight instructor	Age:	40, Male
Airplane Rating(s):	None	Seat Occupied:	Right
Other Aircraft Rating(s):	Helicopter	Restraint Used:	
Instrument Rating(s):	Helicopter	Second Pilot Present:	No
Instructor Rating(s):	Instrument helicopter	Toxicology Performed:	No
Medical Certification:	Class 2 Without waivers/limitations	Last FAA Medical Exam:	July 28, 2012
Occupational Pilot:	Yes	Last Flight Review or Equivalent:	October 3, 2012
Flight Time:	1255 hours (Total, all aircraft), 966 hours (Total, this make and model), 1118 hours (Pilot In Command, all aircraft), 243 hours (Last 90 days, all aircraft), 46 hours (Last 30 days, all aircraft), 3 hours (Last 24 hours, all aircraft)		

Aircraft and Owner/Operator Information

Aircraft Make:	ROBINSON HELICOPTER COMPANY	Registration:	N276RC
Model/Series:	R44 II	Aircraft Category:	Helicopter
Year of Manufacture:		Amateur Built:	
Airworthiness Certificate:	Normal	Serial Number:	11975
Landing Gear Type:	Skid	Seats:	4
Date/Type of Last Inspection:	January 14, 2013 100 hour	Certified Max Gross Wt.:	
Time Since Last Inspection:		Engines:	1 Reciprocating
Airframe Total Time:	2036 Hrs at time of accident	Engine Manufacturer:	LYCOMING
ELT:	Installed, activated, did not aid in locating accident	Engine Model/Series:	IO-540-AE1A5
Registered Owner:	CRUMPTON AVIATION LLC	Rated Power:	260 Horsepower
Operator:	CRUMPTON AVIATION LLC	Operating Certificate(s) Held:	None

Meteorological Information and Flight Plan

Conditions at Accident Site:	Visual (VMC)	Condition of Light:	Night
Observation Facility, Elevation:	KTUL,677 ft msl	Distance from Accident Site:	0 Nautical Miles
Observation Time:	17:53 Local	Direction from Accident Site:	360°
Lowest Cloud Condition:	Scattered / 3700 ft AGL	Visibility	10 miles
Lowest Ceiling:	None	Visibility (RVR):	
Wind Speed/Gusts:	15 knots / 20 knots	Turbulence Type Forecast/Actual:	/
Wind Direction:	160°	Turbulence Severity Forecast/Actual:	/
Altimeter Setting:	29.87 inches Hg	Temperature/Dew Point:	17°C / 6°C
Precipitation and Obscuration:	No Obscuration; No Precipitation		
Departure Point:	Tulsa, OK (KTUL)	Type of Flight Plan Filed:	None
Destination:	Tulsa, OK (KRVS)	Type of Clearance:	VFR
Departure Time:	17:50 Local	Type of Airspace:	

Airport Information

Airport:	Tulsa International Airport KTUL	Runway Surface Type:	
Airport Elevation:	677 ft msl	Runway Surface Condition:	
Runway Used:		IFR Approach:	None
Runway Length/Width:		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:	36.198333,-95.888053(est)

Administrative Information

Investigator In Charge (IIC):	Folkerts, Michael
Additional Participating Persons:	Dan Donnelly; Federal Aviation Administration; Oklahoma City, OK
Original Publish Date:	December 11, 2013
Last Revision Date:	
Investigation Class:	Class
Note:	
Investigation Docket:	https://data.ntsb.gov/Docket?ProjectID=86185

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