



National Transportation Safety Board Aviation Accident Final Report

Location:	Oshkosh, WI	Accident Number:	CEN18FA215
Date & Time:	06/09/2018, 1229 CDT	Registration:	N529DW
Aircraft:	ROBINSON HELICOPTER R44	Aircraft Damage:	Substantial
Defining Event:	Low altitude operation/event	Injuries:	1 Fatal
Flight Conducted Under:	Part 135: Air Taxi & Commuter - Non-scheduled		

Analysis

The commercial pilot of the helicopter had just finished a low-level aerial photography flight of a boating event along a series of lakes and rivers. The pilot landed the helicopter, off-loaded the photographer, and departed to a nearby airport to refuel. Witnesses and surveillance video indicated that the helicopter was flying northwest over the river when, about 1/2 mile from the takeoff location, it contacted two lines of an unmarked five-line array that crossed about 100 ft above the river. The tail rotor separated from the helicopter, and the helicopter subsequently impacted the river.

The photographer reported that they had flown over numerous bridges and power lines during the earlier flight and that they had discussed the location of the power lines in reference to the bridges. Examination of the airframe revealed no evidence of mechanical malfunctions or failures that would have precluded normal operation of the helicopter. The circumstances of the accident are consistent with the pilot flying at an unnecessarily low altitude and then failing to maintain clearance from the wires while flying at low level.

Probable Cause and Findings

The National Transportation Safety Board determines the probable cause(s) of this accident to be:

The pilot's decision to fly over the river at a low altitude and his failure to maintain clearance with wires during low-level flight.

Findings

Aircraft

Personnel issues

Attention - Pilot (Cause)

Decision making/judgment - Pilot (Cause)

Identification/recognition - Pilot (Cause)

Environmental issues

Wire - Effect on operation (Cause)

Wire - Awareness of condition (Cause)

Factual Information

History of Flight

Maneuvering-low-alt flying	Low altitude operation/event (Defining event) Collision with terr/obj (non-CFIT)
Uncontrolled descent	Collision with terr/obj (non-CFIT)

On June 9, 2018, at 1229 central daylight time, a Robinson R44 helicopter, N529DW, was substantially damaged when it collided with wires during a low-level flight in Oshkosh, Wisconsin. The pilot was fatally injured. The helicopter was registered to and operated by MF Helicopters LLC as a Title 14 Code of Federal Regulations Part 135 aerial photography flight. Visual meteorological conditions prevailed near the accident site at the time of the accident, and no flight plan was filed for the flight, which originated about 1226 from a field near the accident site and was en route to Wittman Field (OSH), Oshkosh, Wisconsin.

The helicopter was engaged in aerial photography operations for a boating event on Lake Winnebago. The helicopter was operating from a field on the Fox River, about 1/2 mile southeast of the accident site. The pilot and a photographer were airborne for about 1 1/2 hours flying at low altitude over a series of lakes and waterways while photographing the event. The photographer stated that he and the pilot flew over several bridges and sets of power lines during the flight, and they discussed that many of the bridges had power lines near them. He stated that there were no problems with the helicopter during their flight. The pilot then dropped off the photographer at the field before departing for OSH to refuel.

A surveillance camera captured the helicopter flying northwest when it struck wires that crossed a river. The video showed the helicopter pitching up as it struck the wires. The tail rotor separated from the helicopter and the helicopter descended into the water. Numerous witnesses also reported seeing the helicopter contact the wires and descend into the water.

Pilot Information

Certificate:	Flight Instructor; Commercial	Age:	27, Male
Airplane Rating(s):	None	Seat Occupied:	Left
Other Aircraft Rating(s):	Helicopter	Restraint Used:	
Instrument Rating(s):	Helicopter	Second Pilot Present:	No
Instructor Rating(s):	Helicopter	Toxicology Performed:	Yes
Medical Certification:	Class 2 Without Waivers/Limitations	Last FAA Medical Exam:	05/24/2017
Occupational Pilot:	Yes	Last Flight Review or Equivalent:	12/07/2016
Flight Time:	559.6 hours (Total, all aircraft), 559.6 hours (Total, this make and model), 474.2 hours (Pilot In Command, all aircraft), 8.7 hours (Last 90 days, all aircraft), 6.1 hours (Last 30 days, all aircraft)		

The pilot held a commercial pilot certificate with rotorcraft-helicopter and instrument helicopter ratings. He also held a flight instructor certificate with a rotorcraft-helicopter rating. The pilot's logbook contained entries between August 28, 2013, and May 30, 2018. The logbook showed that the pilot had 559.6 total hours of flight experience, all of which were in Robinson R44 helicopters. The pilot held a Federal Aviation Administration second-class medical certificate that was issued on May 24, 2017. The medical certificate did not list any limitations.

Aircraft and Owner/Operator Information

Aircraft Make:	ROBINSON HELICOPTER	Registration:	N529DW
Model/Series:	R44 UNDESIGNAT	Aircraft Category:	Helicopter
Year of Manufacture:	2001	Amateur Built:	No
Airworthiness Certificate:	Normal	Serial Number:	1109
Landing Gear Type:	Ski;	Seats:	4
Date/Type of Last Inspection:	03/15/2018, Annual	Certified Max Gross Wt.:	
Time Since Last Inspection:		Engines:	1 Reciprocating
Airframe Total Time:	2394.5 Hours as of last inspection	Engine Manufacturer:	LYCOMING
ELT:	Installed, not activated	Engine Model/Series:	O-540-F1B5
Registered Owner:	MF HELICOPTERS LLC	Rated Power:	235 hp
Operator:	MF HELICOPTERS LLC	Operating Certificate(s) Held:	Agricultural Aircraft (137)

Meteorological Information and Flight Plan

Conditions at Accident Site:	Visual Conditions	Condition of Light:	Day
Observation Facility, Elevation:	OSH, 808 ft msl	Distance from Accident Site:	2 Nautical Miles
Observation Time:	1153 CDT	Direction from Accident Site:	360°
Lowest Cloud Condition:	Clear	Visibility	10 Miles
Lowest Ceiling:	None	Visibility (RVR):	
Wind Speed/Gusts:	11 knots /	Turbulence Type Forecast/Actual:	/
Wind Direction:	80°	Turbulence Severity Forecast/Actual:	/
Altimeter Setting:	30.05 inches Hg	Temperature/Dew Point:	22° C / 16° C
Precipitation and Obscuration:	No Obscuration; No Precipitation		
Departure Point:	Oshkosh, WI	Type of Flight Plan Filed:	None
Destination:	Oshkosh, WI (OSH)	Type of Clearance:	None
Departure Time:	1226 CDT	Type of Airspace:	Class G

Wreckage and Impact Information

Crew Injuries:	1 Fatal	Aircraft Damage:	Substantial
Passenger Injuries:	N/A	Aircraft Fire:	None
Ground Injuries:	N/A	Aircraft Explosion:	None
Total Injuries:	1 Fatal	Latitude, Longitude:	44.017222, -88.549444 (est)

The helicopter contacted a static wire and a fiber optic line, which were the top two lines of an unmarked five-line array that crossed over the Fox River. The lines were about 100 ft above the water and spanned about 640 ft across the river.

The helicopter wreckage was located in the river about 300 ft northwest of the wire strike and was subsequently recovered. The entire structure of the helicopter sustained impact damage. Both skids remained attached to the helicopter. The floats were not deployed during the accident sequence but were inadvertently deployed during the wreckage examination. The cockpit area was crushed to the right and the left side of the canopy was missing. The floor of the cockpit was crushed upward.

The main rotor blades remained attached to the helicopter. Continuity of the main rotor system was established from the cockpit controls to the blades. A 180-ft section of 7-strand steel cable

was wrapped around the main rotor hub and both rotor blades. The cable cut through one of the blades from the trailing edge to the blade spar about 66 inches from the blade tip and cut through the other blade about 38 inches from the blade tip. Numerous cable marks were visible on both blades.

The tail rotor separated from the helicopter during the accident sequence and was not located. The tailboom, tail rotor drive shaft, and tail rotor push-pull tube were fractured about 4 ft aft of the forward flex plate. The tail rotor drive shaft remained attached at the forward flex plate, which was deformed. Continuity of the tail rotor drive system was established from the cockpit to the fractures in the tailboom. Examination of the airframe revealed no evidence of mechanical malfunctions or failures that would have precluded normal operation.

Airport Information

Medical And Pathological Information

The Milwaukee County Medical Examiner's Office, Milwaukee, Wisconsin, performed an autopsy of the pilot. The pilot's death was attributed to drowning with blunt force trauma to the head.

The FAA Bioaeronautical Research Sciences Laboratory, Oklahoma City, Oklahoma, performed toxicology testing on specimens of the pilot. Testing was negative for carbon monoxide, cyanide, ethanol, and drugs in the testing profile.

Administrative Information

Investigator In Charge (IIC):	Pamela S Sullivan	Report Date:	11/06/2019
Additional Participating Persons:	Peter T Hupher; FAA; Milwaukee, WI		
Publish Date:	11/06/2019		
Note:	The NTSB traveled to the scene of this accident.		
Investigation Docket:	http://dms.nts.gov/pubdms/search/dockList.cfm?mKey=97427		

The National Transportation Safety Board (NTSB), established in 1967, is an independent federal agency mandated by Congress through the Independent Safety Board Act of 1974 to investigate transportation accidents, determine the probable causes of the accidents, issue safety recommendations, study transportation safety issues, and evaluate the safety effectiveness of government agencies involved in transportation. The NTSB makes public its actions and decisions through accident reports, safety studies, special investigation reports, safety recommendations, and statistical reviews.

The Independent Safety Board Act, as codified at 49 U.S.C. Section 1154(b), precludes the admission into evidence or use of any part of an NTSB report related to an incident or accident in a civil action for damages resulting from a matter mentioned in the report. A factual report that may be admissible under 49 U.S.C. § 1154(b) is available [here](#).