



## National Transportation Safety Board Aviation Accident Factual Report

---

<b>Location:</b>	Brainerd, MN	<b>Accident Number:</b>	GAA16LA325
<b>Date &amp; Time:</b>	06/17/2016, 1400 CDT	<b>Registration:</b>	N155NR
<b>Aircraft:</b>	MD HELICOPTER 369E	<b>Aircraft Damage:</b>	Substantial
<b>Defining Event:</b>	Part(s) separation from AC	<b>Injuries:</b>	2 None
<b>Flight Conducted Under:</b>	Public Aircraft		

---

On June 17, 2016 about 1400 central daylight time (CDT), an MD Helicopters Inc., 369E, N155NR, sustained a windscreen failure in flight, 20 miles south of Brainerd Lakes Regional Airport, Minnesota. The helicopter was registered to the State of Minnesota Department of Natural Resources Enforcement Division and operated as a visual flight rules (VFR) public use local flight under the provisions of 14 Code of Federal Regulations Part 91. Visual meteorological conditions prevailed for the flight, and company VFR flight following was in effect.

The commercial pilot reported that he conducted the aerial observation flight near known thunderstorms and that both the passenger and pilot doors had been removed from the helicopter. He reported that, about 20 miles south of his destination, he decreased the helicopter's airspeed to about 110 mph because, "it began to feel a little bumpy." The pilot added that, "suddenly with no warning," the right center windscreen shattered. The helicopter's nose dropped immediately, and the pilot lowered the collective. After slowing the helicopter to maintain control, the pilot conducted a precautionary landing without further incident. The pilot reported that he did not see anything strike the windscreen and found no evidence of a bird strike. Two of the helicopter's main rotor blades and the horizontal stabilizer sustained substantial damage. The pilot sustained facial lacerations, and the observer on board did not sustain any injury.

## Pilot Information

<b>Certificate:</b>	Flight Instructor; Commercial	<b>Age:</b>	63, Male
<b>Airplane Rating(s):</b>	Single-engine Land	<b>Seat Occupied:</b>	Right
<b>Other Aircraft Rating(s):</b>	Helicopter	<b>Restraint Used:</b>	4-point
<b>Instrument Rating(s):</b>	Helicopter	<b>Second Pilot Present:</b>	No
<b>Instructor Rating(s):</b>	Helicopter	<b>Toxicology Performed:</b>	No
<b>Medical Certification:</b>	Class 2 With Waivers/Limitations	<b>Last FAA Medical Exam:</b>	08/06/2015
<b>Occupational Pilot:</b>	Yes	<b>Last Flight Review or Equivalent:</b>	09/01/2015
<b>Flight Time:</b>	(Estimated) 7958 hours (Total, all aircraft), 85 hours (Total, this make and model), 7455 hours (Pilot In Command, all aircraft), 88 hours (Last 90 days, all aircraft), 61 hours (Last 30 days, all aircraft), 1 hours (Last 24 hours, all aircraft)		

## Other Flight Crew Information

<b>Certificate:</b>	None	<b>Age:</b>	49, Male
<b>Airplane Rating(s):</b>	None	<b>Seat Occupied:</b>	Left
<b>Other Aircraft Rating(s):</b>	None	<b>Restraint Used:</b>	4-point
<b>Instrument Rating(s):</b>	None	<b>Second Pilot Present:</b>	No
<b>Instructor Rating(s):</b>	None	<b>Toxicology Performed:</b>	No
<b>Medical Certification:</b>	None	<b>Last FAA Medical Exam:</b>	
<b>Occupational Pilot:</b>	No	<b>Last Flight Review or Equivalent:</b>	
<b>Flight Time:</b>	0 hours (Total, all aircraft), 0 hours (Total, this make and model)		

## Aircraft and Owner/Operator Information

<b>Aircraft Make:</b>	MD HELICOPTER	<b>Registration:</b>	N155NR
<b>Model/Series:</b>	369E 500	<b>Aircraft Category:</b>	Helicopter
<b>Year of Manufacture:</b>	2015	<b>Amateur Built:</b>	No
<b>Airworthiness Certificate:</b>	Normal	<b>Serial Number:</b>	0623E
<b>Landing Gear Type:</b>	Skid	<b>Seats:</b>	4
<b>Date/Type of Last Inspection:</b>		<b>Certified Max Gross Wt.:</b>	3000 lbs
<b>Time Since Last Inspection:</b>		<b>Engines:</b>	1 Turbo Shaft
<b>Airframe Total Time:</b>	91.1 Hours at time of accident	<b>Engine Manufacturer:</b>	Rolls Royce
<b>ELT:</b>	Installed, not activated	<b>Engine Model/Series:</b>	C20B
<b>Registered Owner:</b>	Minnesota Department of Natural Resources	<b>Rated Power:</b>	420 hp
<b>Operator:</b>	Minnesota Department of Natural Resources	<b>Operating Certificate(s) Held:</b>	None

## Meteorological Information and Flight Plan

<b>Conditions at Accident Site:</b>	Visual Conditions	<b>Condition of Light:</b>	Day
<b>Observation Facility, Elevation:</b>	KBRD, 1221 ft msl	<b>Distance from Accident Site:</b>	18 Nautical Miles
<b>Observation Time:</b>	1702 UTC	<b>Direction from Accident Site:</b>	72°
<b>Lowest Cloud Condition:</b>		<b>Visibility</b>	10 Miles
<b>Lowest Ceiling:</b>	Broken / 3000 ft agl	<b>Visibility (RVR):</b>	
<b>Wind Speed/Gusts:</b>	9 knots / 19 knots	<b>Turbulence Type Forecast/Actual:</b>	/ None
<b>Wind Direction:</b>	360°	<b>Turbulence Severity Forecast/Actual:</b>	/ N/A
<b>Altimeter Setting:</b>	30.16 inches Hg	<b>Temperature/Dew Point:</b>	22° C / 17° C
<b>Precipitation and Obscuration:</b>	Moderate - In the Vicinity - Thunderstorms - No Precipitation		
<b>Departure Point:</b>	ST CLOUD, MN (STC)	<b>Type of Flight Plan Filed:</b>	Company VFR
<b>Destination:</b>	BRAINERD, MN (BRD)	<b>Type of Clearance:</b>	None
<b>Departure Time:</b>	1325 CDT	<b>Type of Airspace:</b>	Class G

## Wreckage and Impact Information

Crew Injuries:	1 None	Aircraft Damage:	Substantial
Passenger Injuries:	1 None	Aircraft Fire:	None
Ground Injuries:	N/A	Aircraft Explosion:	None
Total Injuries:	2 None	Latitude, Longitude:	46.314444, -94.537222 (est)

According to the Federal Aviation Administration Inspector who responded to the accident, the right front windshield failed in cruise flight for unknown reasons. A post-accident examination of the helicopter by the inspector revealed that debris from the windshield had made gouges in the main rotor blades and the horizontal stabilizer. A significant portion of the windshield was not recovered.

Examination of the recovered windshield pieces revealed evidence of cracking that originated on the external surface of the center of the windshield and then propagated outward.

*\*\*\*This report was modified on August 30, 2017. Please see the docket for this accident to view the original report.\*\*\**

## Tests And Research

DNA samples taken from portions of the windshield were sent to the Smithsonian Feather Identification Laboratory in Washington, DC. Microscopic examination of one of the samples revealed evidence of feathers. The DNA from the feathers matched the Western Kingbird (*Tyrannus verticalis*), which is a very small bird.

## Administrative Information

Investigator In Charge (IIC):	Michael A Hicks
Additional Participating Persons:	David R Nelson; FAA; Minneapolis, MN
Note:	The NTSB did not travel to the scene of this accident.
Investigation Docket:	<a href="http://dms.nts.gov/pubdms/search/dockList.cfm?mKey=93440">http://dms.nts.gov/pubdms/search/dockList.cfm?mKey=93440</a>