Aviation Investigation Final Report

Location:	Mount Vernon, Illinois	**Accident Number:**	CEN22LA328
Date & Time:	July 19, 2022, 20:41 Local	**Registration:**	N228MT
Aircraft:	EUROCOPTER DEUTSCHLAND GMBH EC 135	**Aircraft Damage:**	Substantial
Defining Event:	Airport occurrence	**Injuries:**	3 None
Flight Conducted Under:	Part 135: Air taxi & commuter - Non-scheduled - Air Medical (Unspecified)		

Analysis

During the landing, the pilot lowered the helicopter air ambulance down to the concrete pad. Shortly before touchdown, a cloth fire extinguisher cover from a nearby mobile fueling unit was blown airborne from the main rotor system wash. The cloth fire extinguisher cover was ingested into the tail rotor (the fenestron). During the cloth fire extinguisher cover ingestion sequence, the fenestron hub flexed, the metal fenestron hub cover detached, and it was also ingested. The pilot was able to land the helicopter without further incident. The helicopter sustained substantial damage to the fenestron. The evidence indicated that the ingestion of the metal fenestron hub cover contributed to the severity of the damage sustained.

The operator reported there were no preimpact mechanical malfunctions or failures with the airframe and the engines that would have precluded normal operation. The investigation revealed that the cloth fire extinguisher cover, which did not have a lanyard installed, was not secured with the retention bracket for the fire extinguisher on the mobile fueling unit. The operator additionally reported that foreign object debris checks are conducted by crew members anytime they are on the pad and that the mobile fueling unit is inspected during the daily fuel quality check. The Accident Investigation Board Norway along with the European Aviation Safety Agency, previously issued a formal safety recommendation to Eurocopter (Airbus) regarding the securement of the metal fenestron hub cover.

Probable Cause and Findings

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

The inadequate securement of the cloth fire extinguisher cover, which resulted in it being blown off the fire extinguisher and ingested into the helicopter's fenestron during the landing.

Findings

Environmental issues	Debris/dirt/foreign object - Effect on equipment
Aircraft	(general) - Failure
Aircraft	(general) - Damaged/degraded

Factual Information

History of Flight

Landing	Airport occurrence (Defining event)
Landing	Prop/jet/rotor blast/suction
Landing	Sys/Comp malf/fail (non-power)
Landing	Part(s) separation from AC

Pilot Information

Certificate:	Airline transport	**Age:**	50,Male
Airplane Rating(s):	Single-engine land	**Seat Occupied:**	Right
Other Aircraft Rating(s):	Helicopter	**Restraint Used:**	4-point
Instrument Rating(s):	Helicopter	**Second Pilot Present:**	No
Instructor Rating(s):	None	**Toxicology Performed:**	
Medical Certification:	Class 2 With waivers/limitations	**Last FAA Medical Exam:**	March 10, 2022
Occupational Pilot:	Yes	**Last Flight Review or Equivalent:**	April 2, 2022
Flight Time:	(Estimated) 3210.5 hours (Total, all aircraft), 2671.3 hours (Pilot In Command, all aircraft)		

Aircraft and Owner/Operator Information

Aircraft Make:	EUROCOPTER DEUTSCHLAND GMBH	**Registration:**	N228MT
Model/Series:	EC 135 P2+	**Aircraft Category:**	Helicopter
Year of Manufacture:	2010	**Amateur Built:**	
Airworthiness Certificate:	Normal	**Serial Number:**	0908
Landing Gear Type:	Skid	**Seats:**	5
Date/Type of Last Inspection:	July 12, 2022 100 hour	**Certified Max Gross Wt.:**	6415 lbs
Time Since Last Inspection:		**Engines:**	2 Turbo shaft
Airframe Total Time:	1271.2 Hrs as of last inspection	**Engine Manufacturer:**	Pratt & Whitney Canada
ELT:	C126 installed, not activated	**Engine Model/Series:**	PW206B2
Registered Owner:	Air Evac Lifeteam	**Rated Power:**	447 Horsepower
Operator:	Air Evac Lifeteam	**Operating Certificate(s) Held:**	On-demand air taxi (135)
Operator Does Business As:	Air Evac Lifeteam	**Operator Designator Code:**	EVCA

Meteorological Information and Flight Plan

Conditions at Accident Site:	Visual (VMC)	**Condition of Light:**	Dusk
Observation Facility, Elevation:	KMVN,480 ft msl	**Distance from Accident Site:**	0 Nautical Miles
Observation Time:	19:56 Local	**Direction from Accident Site:**	38°
Lowest Cloud Condition:	Clear	**Visibility**	10 miles
Lowest Ceiling:	None	**Visibility (RVR):**	
Wind Speed/Gusts:	4 knots /	**Turbulence Type Forecast/Actual:**	None / None
Wind Direction:	170°	**Turbulence Severity Forecast/Actual:**	N/A / N/A
Altimeter Setting:	29.82 inches Hg	**Temperature/Dew Point:**	29°C / 23°C
Precipitation and Obscuration:	No Obscuration; No Precipitation		
Departure Point:	Cahokia, IL (CPS)	**Type of Flight Plan Filed:**	Company VFR
Destination:	Mount Vernon, IL	**Type of Clearance:**	VFR;Traffic advisory
Departure Time:	20:02 Local	**Type of Airspace:**	Class E

Airport Information

Airport:	MOUNT VERNON MVN	**Runway Surface Type:**	
Airport Elevation:	480 ft msl	**Runway Surface Condition:**	Dry
Runway Used:		**IFR Approach:**	None
Runway Length/Width:		**VFR Approach/Landing:**	Full stop

Wreckage and Impact Information

Crew Injuries:	3 None	**Aircraft Damage:**	Substantial
Passenger Injuries:	N/A	**Aircraft Fire:**	None
Ground Injuries:	N/A	**Aircraft Explosion:**	None
Total Injuries:	3 None	**Latitude, Longitude:**	38.317926,-88.86306(est)

Administrative Information

Investigator In Charge (IIC):	Hodges, Michael
Additional Participating Persons:	Nicholas Loftus; FAA Springfield FSDO; Springfield, IL
Original Publish Date:	September 22, 2022
Last Revision Date:	
Investigation Class:	Class 4
Note:	The NTSB did not travel to the scene of this accident.
Investigation Docket:	https://data.ntsb.gov/Docket?ProjectID=105540