 National Transportation Safety Board PRELIMINARY REPORT AVIATION		NTSB ID: ERA10MA188		Most Critical Injury: Fatal		
		Occurrence Date: 03/25/2010		Investigated By: NTSB		
		Occurrence Type: Accident				
Location/Time						
Nearest City/Place		State	Zip Code	Local Time	Time Zone	
Brownsville		TN	38012	0600	CDT	
Aircraft Information						
Registration Number		Aircraft Manufacturer		Model/Series Number		
N855HW		EUROCOPTER		AS-350-B3		
Type of Aircraft: Helicopter			Amateur Built Aircraft? No			
Injury Summary:		Fatal	3	Serious	Minor	None
Revenue Sightseeing Flight: No			Air Medical Transport Flight: Discretionary			
Narrative						
Brief narrative statement of facts, conditions and circumstances pertinent to the accident/incident:						
<p>On March 25, 2010, at 0600 central daylight time, a Eurocopter AS-350-B3, operated by Memphis Medical Center Air Ambulance Service, doing business as Hospital Wing, was destroyed when it impacted terrain while approaching Brownsville, Tennessee. The certificated commercial pilot and two flight nurses were fatally injured. Night instrument meteorological conditions were present in the area. The flight was operating on a company flight plan, and departed Jackson-Madison County General Hospital Heliport (TN05), Jackson, Tennessee, en route to Haywood County EMS Heliport (TN99), Brownsville, Tennessee. The positioning flight was conducted under the provisions of 14 Code of Federal Regulations Part 91.</p> <p>According to helicopter satellite tracking, and company information, the helicopter initially departed TN99, the helicopter's home base, at 0426, and arrived in Parsons, Tennessee, at 0450 to embark a patient. The helicopter departed Parsons at 0517, and arrived at TN05, to disembark the patient, at 0534. The helicopter subsequently departed TN05 at 0551, and the last satellite contact occurred near the accident site at 0600. Satellite-recorded helicopter en route altitudes during the last flight segment were about 1,000 feet above mean sea level (msl), until the last contact, when the helicopter's altitude indicated 752 feet.</p> <p>According to an oncoming shift pilot, who started his duty at 0530, it was dark and cloudy when he arrived at TN99, with light rain. When he entered the hangar, he noticed that the helicopter was gone. He was concerned about the weather and called MEDCOM, a flight following center, to locate the helicopter, which was then on the pad at TN05. After hanging up with MEDCOM, the accident pilot called the oncoming pilot via cell phone, and asked about the weather, as there was a small shower between Jackson and Brownsville. The accident pilot stated that "he wanted to get the helicopter out," and the oncoming pilot asked, "Can you park it?" The accident pilot then responded that another helicopter already occupied the lower elevation pad, which the oncoming pilot took to mean that the accident pilot didn't want to leave the helicopter on the hospital's elevated pad.</p> <p>The two pilots further discussed the weather, and the oncoming pilot noted, from a computer-based radar depiction, that there was a front coming from the Memphis area at a speed of about 25 miles per hour. At the time, the radar was depicting "red" over Memphis, and "yellow" extending about 10 miles out.</p> <p>The accident pilot then stated that he figured he had about 18 minutes to get the helicopter back to base, to beat the storm. He told the oncoming pilot to call the two flight nurses, who were not yet back onboard the helicopter, to advise them that he was going to take off, and that they would be picked up later by car.</p> <p>The oncoming pilot subsequently tried to call one of the flight nurses, but she had left her phone back at the base. He then called the other nurse and told her the plan; however, she stated that they had made it back to the helicopter, and were 7 minutes "out" from the base.</p>						
PRELIMINARY INFORMATION - SUBJECT TO CHANGE						

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The oncoming pilot subsequently raised the door of the hangar, then went back to look at the weather radar again, and saw that the thunderstorm line had "just barely touched the southwest corner of county." He then went outside, and since he couldn't see the helicopter, he called the flight nurse again. When she answered, she asked about the weather. The oncoming pilot saw the blinking light on a radio tower to the east, about 6 miles away, "so visibility was good," and told the nurse that "she had the weather beat." The nurse then stated that they were 30 seconds out.

At the time of the conversation, the oncoming pilot observed that it was raining lightly, but that the wind had picked up, perhaps to 20 knots. Then, just after hanging up, there was an "immediate" loud clap of thunder and lightning that made him jump. He subsequently looked out, but saw no helicopter, and tried to call the nurse without success. He then called MEDCOM, and ran up the hill to contact the ambulance service located there. As he did so, it was raining harder than before, but it was not a soaking rain.

PILOT INFORMATION

The pilot held a commercial pilot certificate, with airplane single engine land, multi-rotorcraft-helicopter, and instrument airplane and helicopter ratings. According to company records, the pilot was initially hired by Hospital Wing on May 10, 2005. At the time, he indicated about 2,200 hours of helicopter flight time, and since then, he accrued about 415 additional hours.

The pilot's latest Part 135 check ride was completed on August 26, 2009, and his latest instrument competency check was completed on Feb 14, 2010. The pilot's initial and only night vision goggle (NVG) training was completed on July 27, 2009, and his latest Federal Aviation Administration (FAA) second class certificate was issued on March 15, 2009. At the time, the pilot indicated 4,008 hours of total flight time.

AIRCRAFT INFORMATION

The helicopter was manufactured in France in 2008, and certificated in the United States in 2009. At the time of the accident, the helicopter had accrued approximately 248 hours of total time since new (TTSN).

The helicopter was powered by a single Arriel 2B1 engine, rated at 747 shaft horsepower for takeoff.

According to aircraft records, American Eurocopter delivered the helicopter to Hospital Wing in May 2009. At the time of delivery, the helicopter was equipped with high skid landing gear, NVG-compatible lighting, a Vehicle Engine Multifunction Display (VEMD), and an enhanced ground proximity warning system (EGPWS).

Hospital Wing subsequently sent the helicopter to Metro Aviation, Shreveport, Louisiana, for aftermarket installations, including a medical interior. The helicopter was configured with the pilot seat in the right front position, the medical litter extending from the left front to the left aft cabin bulkhead, and medical crew seat backs against the aft cabin bulkhead.

Hospital Wing maintained the helicopter in accordance with the Eurocopter Master Servicing Recommendations. The aircraft logbook revealed that the most recent 200 hour, and annual inspections were accomplished on March 1, 2010 at 199.6 hours TTSN. At the time of the accident, there no outstanding discrepancies listed in the maintenance records.

METEOROLOGICAL INFORMATION

Weather, recorded at McKeller-Sipes Regional Airport, Jackson, Tennessee, about 17 miles to the

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east of the accident site, at 0553, included winds from 160 degrees true at 5 knots, visibility greater than 10 statute miles, a few clouds at 2,000 feet, a broken cloud layer at 2,700 feet, an overcast cloud layer at 3,700 feet, temperature 16 degrees C, dew point 12 degrees C, an altimeter setting of 29.77 inches Hg, and distant lightning to the southwest.

Radar images indicated that at the approximate time of the accident, a mesoscale convective system was moving through the area, southwest to northeast, at a groundspeed of about 60 knots. The location of the most severe portion of the convective system was coincident with the accident time and location. There was also a "bow" shape in a line of severe thunderstorms near the accident site, typically associated with strong surface winds, heavy rainfall and extreme wind-shear.

Infrared satellite imagery indicated extensive cloud cover over far-western Tennessee during the time of the accident, with cloud tops at 30,000 feet and greater.

Three witnesses near the accident site stated that they saw lightning and heard thunder at the time of the accident. One witness stated that it was very windy at the time, and another stated that heavy rain bands were passing through the area.

WRECKAGE AND IMPACT INFORMATION

The helicopter was located in an open, new growth wheat field, about 080 degrees magnetic, 2 1/2 statute miles from TN99, in the vicinity of 35 degrees 36.44 minutes north latitude, 089 degrees 11.70 minutes west longitude. The main debris field was approximately 250 feet long and 150 feet wide, oriented toward 180 degrees magnetic. The GPS-measured elevation was 386 feet above mean sea level.

Initial ground scars, with one containing main rotor blade fragments and the other, parts of the left landing gear skid along with helicopter belly pieces, were oriented consistent with the helicopter impacting the ground in nose-level, 40-degree left bank attitude.

The main wreckage, consisting of the cabin and cockpit areas, came to rest about 110 feet south of the initial ground scars, and was mostly destroyed by a post-impact fire.

No preimpact mechanical anomalies were noted with the helicopter.

All three main rotor blades (yellow, blue & red) remained attached to the hub. All three blades exhibited impact damage, with two of the blades exhibiting broomstraw damage.

Flight control hardware from the cockpit to the rotor head exhibited fracture surfaces consistent with overload.

The tail boom was separated approximately 3 feet aft of the fuselage attach point, and was mostly intact. The flex coupling that connected the forward tail rotor drive shaft to the engine exhibited evidence of torsional separation. Tail rotor strike indicators were partially bent, and flapping damage was observed on the tail rotor blades, along with damage to the right side of the tail boom, consistent with rotating tail rotor blade contact.

The engine exhibited evidence of power on at impact, including foreign object damage to eight of the axial compressor blades, and blade tip curling of two of the blades. The engine power shaft also exhibited torsional damage.

The helicopter, including the rotor blades, was examined for evidence of lightning strikes, with none found. In addition, a wheeled, above ground irrigation system, about 600 feet in length and 1/4 mile from the accident site, was examined for evidence of lightning strikes, with none found.

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ADDITIONAL INFORMATION

The helicopter was not equipped with either a cockpit voice recorder or a flight data recorder. However, the VEMD, a multi-function display (MFD), and the engine's digital electronic control unit (DECU) were retained for an attempted recovery of non-volatile data.

Updated on Apr 12 2010 1:38PM

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Other Aircraft Involved		
Registration Number	Aircraft Manufacturer	Model/Series Number


Accident Information	
Aircraft Damage: Destroyed	Accident Occurred During:

Crew	Name	Certificate No.	Injury
Pilot	On File	On File	Fatal
2			
3			
4			
5			
6			

Operator Information			
Name	Operator Designator Code	Doing Business As	
MEMPHIS MEDICAL CENTER AIR AMBULANCE SERVICE		HOSPITAL WING	
Street Address	City	State	Zip Code
1080 EASTMORELAND DR	MEMPHIS	TN	38104
-Type of Certificate(s) Held:			
Air Carrier Operating Certificate(s): On-demand Air Taxi			
Operating Certificate:		Operator Certificate:	
Regulation Flight Conducted Under: Part 91: General Aviation			
Type of Flight Operations Conducted: Positioning			

Flight Plan/Itinerary			
Type of Flight Plan Filed: Company VFR			
Last Departure Point	State	Airport Identifier	
Jackson	TN	TN05	
Destination	State	Airport Identifier	
Brownsville	TN	TN99	

Weather Information			
Investigator's Source: Company	Facility ID: MKL	Observation Time (Local): 0553	
Sky/Lowest Cloud Condition: Few	2000 Ft. AGL		
Lowest Ceiling: Broken	2700 Ft. AGL	Visibility: 10 SM	Altimeter: 29.77 "Hg

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Weather Information (Continued from page 2)

Temperature: 16 °C	Dew Point: 12 °C	Wind Direction: 160	
Wind Speed: 5 Kts.	Gusts: Kts.	Weather Conditions at Accident Site:	

Administration Data

Notification From FAA Southern Region ROC	Date
FAA District Office/Coordinator FAA/AVP-100 Eric West	Investigator-In-Charge (IIC) Paul R. Cox