



# National Transportation Safety Board Aviation Incident Final Report

<b>Location:</b>	Relience, TN	<b>Incident Number:</b>	ERA11IA436
<b>Date &amp; Time:</b>	08/01/2011, 1818 EDT	<b>Registration:</b>	N484AE
<b>Aircraft:</b>	BELL 206	<b>Aircraft Damage:</b>	Minor
<b>Defining Event:</b>	Controlled flight into terr/obj (CFIT)	<b>Injuries:</b>	4 None
<b>Flight Conducted Under:</b>	Part 135: Air Taxi & Commuter - Non-scheduled - Air Medical (Medical Emergency)		

## Analysis

Before landing, the pilot performed a high and low reconnaissance of the area and received a briefing of the obstacles by the landing zone. The crew was advised of wires along the road north of the field and large rolls of hay spaced intermittently across the field. The pilot then landed the helicopter in a field and picked up a patient who had been involved in a motor vehicle accident. Given the weight of the helicopter and power available, the pilot elected to perform an airspeed-over-altitude takeoff on a westerly departure path along the long axis of the landing zone. The departure path was signaled to the landing zone commander, who issued an approval for the takeoff. During the initial takeoff climb, the helicopter struck wires and returned to the field for landing. After the incident, a closer inspection of the takeoff path revealed that a three-strand group of wires crossed the west side of the field perpendicular to the takeoff path. When viewed from the point of departure, the wires appeared to emanate from the thick, tall tree lines that bordered both sides of the landing zone, and were superimposed against a background of dense woods. There were no additional visual cues (poles, towers, or transformers) available that could be associated with the wires. Additionally, at the time of the accident, the sun was directly in the takeoff path and 30 degrees above the horizon. The bright sunlight and glare conditions likely reduced the ability of ground crew and the flight crew to discern wire obstacles.

## Probable Cause and Findings

The National Transportation Safety Board determines the probable cause(s) of this incident to be: Inadvertent contact with wires due to the lack of visual cues regarding their presence and the low angle of the sun, which was directly in the takeoff path.

### Findings

<b>Environmental issues</b>	Wire - Awareness of condition (Cause)
	Glare - Not specified
	Bright light - Not specified

## Factual Information

### HISTORY OF FLIGHT

On August 1, 2011, about 1818 eastern daylight time, a Bell 206 L4 helicopter, N484AE, operated by Air Evac EMS, Inc., sustained minor damage from a wire strike during takeoff in Reliance, Tennessee. The certificated commercial pilot, two crewmembers and one patient were not injured. Visual meteorological conditions prevailed, and a company flight plan was filed for the flight that departed a farm field in wooded, hilly terrain. The medical evacuation flight was conducted under the provisions of 14 CFR Part 135, and destined for Erlanger Medical Center Heliport (OTN8), Chattanooga, Tennessee.

In a written statement, the pilot stated that the purpose of the flight was to pick up a patient that had been involved in a motor vehicle accident. The landing zone (LZ) was a large field where he performed an approach after performing a "high and low recon" of the area, and receiving a briefing of the obstacles by the "LZ command" that was established by the local fire department. The crew was advised of wires along the road north of the field, and large rolls of hay spaced intermittently across the field.

After he determined the weight of the helicopter and power available, the pilot decided on an "airspeed over altitude" takeoff. The pilot chose a westerly departure path because the field offered a "long, open area with down-sloping terrain." The departure path was signaled to the LZ commander, who issued approval for the takeoff through a firefighter.

The pilot initiated the takeoff, and when the helicopter reached 50 feet and 40 knots, the pilot adjusted the flight controls for a 60-knot climb. About that time, the pilot heard a loud "thud" and saw scuff marks on the windscreen that alerted him to the wire strike. He announced the emergency to his crew, and completed a precautionary landing back to the field.

Written statements provided by both crewmembers were consistent with the pilot's.

On August 2, 2011, a Federal Aviation Administration (FAA) aviation safety inspector visited the site, and photographed the area. Damage to the helicopter was limited to the windscreen, and no major structural damage was noted. Scratches in the paint and marks on the upper and lower Wire Strike Protection System (WSPS) were consistent with a wire strike.

The inspector observed that a three-strand group of wires crossed the west side of the field perpendicular to the takeoff path. When viewed from the point of departure, the wires appeared out of the thick, tall tree lines that bordered both sides of the LZ, and were superimposed against a background of dense woods. There were no additional visual cues (poles, towers, or transformers) available that could be associated with the wires.

### PERSONNEL INFORMATION

The pilot held a commercial pilot certificate with ratings for rotorcraft helicopter and instrument helicopter. He reported 2,173 total hours of flight experience, of which 116 were in the incident helicopter make and model. His most recent FAA second-class medical certificate was issued on June 1, 2011.

### AIRCRAFT INFORMATION

According to FAA records, the helicopter was manufactured in 2010. The most recent inspection in the helicopter Approved Aircraft Inspection Program (AAIP) was completed July

27, 2011, at 564 total aircraft hours.

## METEOROLOGICAL INFORMATION

At 1853, the weather conditions reported at Lovell Field, Chattanooga, Tennessee, located approximately xx miles xx of the incident site, included few clouds at 6,500 feet, visibility 10 miles, temperature 36 degrees C, dew point 15 degrees C, and an altimeter setting of 29.93 inches of mercury. The wind was from 120 degrees at 6 knots.

The calculated density altitude at the time of the incident was 3,318 feet.

According to the U.S. Naval Observatory, at the time of the incident the azimuth of the sun was about 273 degrees east of north, and the sun was positioned approximately 28 degrees above the horizon.

## History of Flight

Initial climb	Controlled flight into terr/obj (CFIT) (Defining event)
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## Pilot Information

<b>Certificate:</b>	Commercial	<b>Age:</b>	30, Male
<b>Airplane Rating(s):</b>	None	<b>Seat Occupied:</b>	Right
<b>Other Aircraft Rating(s):</b>	Helicopter	<b>Restraint Used:</b>	Seatbelt, Shoulder harness
<b>Instrument Rating(s):</b>	Helicopter	<b>Second Pilot Present:</b>	No
<b>Instructor Rating(s):</b>	None	<b>Toxicology Performed:</b>	No
<b>Medical Certification:</b>	Class 2 Without Waivers/Limitations	<b>Last Medical Exam:</b>	06/01/2011
<b>Occupational Pilot:</b>	Yes	<b>Last Flight Review or Equivalent:</b>	11/25/2010
<b>Flight Time:</b>	2173 hours (Total, all aircraft), 116 hours (Total, this make and model), 1223 hours (Pilot In Command, all aircraft)		

## Aircraft and Owner/Operator Information

Aircraft Manufacturer:	BELL	Registration:	N484AE
Model/Series:	206 L4	Aircraft Category:	Helicopter
Year of Manufacture:		Amateur Built:	No
Airworthiness Certificate:	Normal	Serial Number:	52411
Landing Gear Type:	High Skid	Seats:	3
Date/Type of Last Inspection:	07/27/2011, AAIP	Certified Max Gross Wt.:	4450 lbs
Time Since Last Inspection:	9 Hours	Engines:	1 Turbo Shaft
Airframe Total Time:	564 Hours	Engine Manufacturer:	Rolls-Royce
ELT:	Installed, not activated	Engine Model/Series:	250-C30P
Registered Owner:	Wells Fargo Bank Northwest NA Trustee	Rated Power:	lbs
Operator:	AIR EVAC EMS INC	Air Carrier Operating Certificate:	On-demand Air Taxi (135)
Operator Does Business As:		Operator Designator Code:	EVCA

## Meteorological Information and Flight Plan

Observation Facility, Elevation:	KCHA, 682 ft msl	Observation Time:	1853 EDT
Distance from Accident Site:	42 Nautical Miles	Condition of Light:	Day
Direction from Accident Site:	240°	Conditions at Accident Site:	Visual Conditions
Lowest Cloud Condition:	Few / 6500 ft agl	Temperature/Dew Point:	36° C / 15° C
Lowest Ceiling:	None	Visibility	10 Miles
Wind Speed/Gusts, Direction:	6 knots, 20°	Visibility (RVR):	
Altimeter Setting:	29.93 inches Hg	Visibility (RVV):	
Precipitation and Obscuration:	No Obscuration; No Precipitation		
Departure Point:	Relience, TN	Type of Flight Plan Filed:	Company VFR
Destination:	Chattanooga, TN (OTN8)	Type of Clearance:	None
Departure Time:	1818 EDT	Type of Airspace:	

## Wreckage and Impact Information

Crew Injuries:	3 None	Aircraft Damage:	Minor
Passenger Injuries:	1 None	Aircraft Fire:	None
Ground Injuries:	N/A	Aircraft Explosion:	None
Total Injuries:	4 None		

## Administrative Information

<b>Investigator In Charge (IIC):</b>	Brian C Rayner	<b>Adopted Date:</b>	04/24/2012
<b>Additional Participating Persons:</b>	Tim Allen; FAA/FSDO; Nashville, TN		
<b>Publish Date:</b>	04/24/2012		
<b>Investigation Docket:</b>	<a href="http://dms.nts.gov/pubdms/search/dockList.cfm?mKey=81355">http://dms.nts.gov/pubdms/search/dockList.cfm?mKey=81355</a>		

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