

## Bell 407, N44EA

<b>AAIB Bulletin No: 6/2004</b>	<b>Ref: EW/G2003/12/11</b>	<b>Category: 2.2</b>
<b>Aircraft Type and Registration:</b>	Bell 407, N44EA	
<b>No &amp; Type of Engines:</b>	1 Rolls-Royce 250-C47B turboshaft engine	
<b>Year of Manufacture:</b>	2003	
<b>Date &amp; Time (UTC):</b>	20 December 2003 at 0100 hrs	
<b>Location:</b>	North of Patriot Hills, Antarctica	
<b>Type of Flight:</b>	Private	
<b>Persons on Board:</b>	Crew - 2	Passengers - None
<b>Injuries:</b>	Crew - 2 (Serious)	Passengers - N/A
<b>Nature of Damage:</b>	Destroyed	
<b>Commander's Licence:</b>	FAA and UK Private Pilot's Licence Helicopters	
<b>Commander's Age:</b>	52 years	
<b>Commander's Flying Experience:</b>	8,500 hours (of which 185 were on type)	
	Last 90 days - 185 hours	
	Last 28 days - 67 hours	
<b>Information Source:</b>	Aircraft Accident Report Form submitted by the pilot	

The helicopter and crew were involved in an attempt to circumnavigate the earth from Pole to Pole. The expedition had departed New York in October 2003 and had reached the South Pole on 17 December 2003. On the day of the accident, the helicopter had begun its northward journey and was attempting to fly from Patriot Hills (some 600 nm north of the South Pole) to Fossil Bluff via a fuel cache about 340 miles north of Patriot Hills.

The crew received a meteorological briefing at Patriot Hills, which included satellite imagery, and they took advice from a professional pilot with many years of Antarctic flying experience. It was agreed that the weather looked suitable for the flight, and the helicopter departed Patriot Hills under clear skies. The flight proceeded uneventfully at 1,000 feet agl until about 100 miles south of the fuel cache the cloud cover increased, although the cloud base remained high and visibility was good. Without warning, the helicopter entered 'white-out' conditions, and the crew lost all visual references. They attempted to fly out of the conditions by reversing their course, but without success, and so the commander decided to attempt a landing. With the non-handling pilot calling out radio altitude, the commander commenced a descent and began to reduce speed. As the helicopter passed through about 200 feet agl, the crew were still unable to see the surface and the commander began to slow the helicopter from 60 kt. At a speed of about 45 kt and just as the non-handling pilot called a radio

altitude of 140 feet, the helicopter struck the surface abruptly. The engine stopped immediately and the helicopter came to a halt upright, having suffered severe damage to the tail boom, rotor blades and fuselage. The commander suffered back injuries consistent with a high vertical velocity at impact whilst the non-handling pilot suffered a dislocated elbow. Nevertheless, they were able to vacate the helicopter and take shelter from the -30°C ambient temperature. They activated their search and rescue contingency plans, which included an emergency locator beacon and a satellite telephone. About four hours after the accident a Twin Otter landed at the crash site and rescued the crew.

In his report, the commander noted the prevalence of 'white-out' conditions in Antarctica and stated that the accident might have been avoided if he had decided to land sooner. He also reported that pilots experienced in Antarctic flying were aware of a tendency for radio altimeters to misread over a dry snow surface.