

Aircraft Type and Registration:	Vans RV-6A, G-RVCG	
No & Type of Engines:	1 Lycoming O-320-3DG piston engine	
Year of Manufacture:	2001	
Date & Time (UTC):	1 September 2004 at 1545 hrs	
Location:	Wellesbourne Mountford Aerodrome, Warwick	
Type of Flight:	Private	
Persons on Board:	Crew - 1	Passengers - 1
Injuries:	Crew - None	Passengers - None
Nature of Damage:	Nose leg bent	
Commander's Licence:	Private Pilot's Licence	
Commander's Age:	69 years	
Commander's Flying Experience:	1,235 hours (of which 4 were on type) Last 90 days - 16 hours Last 28 days - 8 hours	
Information Source:	Aircraft Accident Report Form submitted by the pilot plus information from eye witnesses	

History of the flight

The pilot, who was not the owner, was performing a test flight on this amateur-built aircraft on behalf of the Popular Flying Association (PFA). This was the second flight of the day and the ninth landing since the aircraft was first flown.

The pilot reports that he had been airborne for some 95 minutes and returned for a landing on Runway 18 at Wellesbourne Mountford, an asphalt runway with a landing distance available of 912 metres. The pilot made what he considered a good landing and he opened the throttle with the intention of making it a 'touch-and-go'. At this point, he reports, the nosewheel seemed to make contact with the runway and, because he heard a 'grating' sound, the pilot decided to abandon the takeoff. The grating sound continued and the aircraft was brought to a slow halt within the remaining length of the runway.

Examination

After vacating the aircraft in the normal way the pilot saw that the nose leg was bent and that the yoke carrying the nosewheel had 'tucked under' (rotating rearwards) so that the nose of the aircraft was resting on this yoke. The pilot was surprised to see the nose leg distorted as he had expected to find that the nose tyre had deflated.

The RV-6A is a development of the very popular and widespread RV-6 side-by-side kit-built aircraft. The RV-6 is a tailwheel aircraft and for the RV-6A a simple nose leg assembly was added, with a steel leg attached to the engine mount and protruding forward to a free-castoring yoke and nosewheel, similar to the design of that fitted to the Grumman AA5 series of light aircraft. The AAIB has been notified of a total of three notifiable accidents, all minor, to RV-6A aircraft in the UK. Of these, two (G-BVRE on 21 April 2001 and G-HOPY on 4 September 1999) involved collapse of the nose leg.

In this accident the nosewheel yoke showed distinct marks from having scraped along the surface of the asphalt and the added drag from this abrasion would have generated further distortion of the leg. It was considered possible that excessive torque applied in the assembly of the nosewheel into the yoke could have generated high drag loads in the noseleg but the assembly torque appeared normal and the tyre did not show signs of skidding. A metallurgical test of the noseleg showed that the leg met the design specification.

It is likely that the leg was deflected by a vertical load at some point along the runway. Reports from a number of eyewitnesses suggest that the noseleg may have been subjected to a higher vertical load during the attempted touch and go sequence than the pilot appreciated, causing deflection so that the yoke contacted the runway surface.