

## ACCIDENT

<b>Aircraft Type and Registration:</b>	Cessna 152, G-BNDO	
<b>No &amp; type of Engines:</b>	1 Lycoming O-235-L2C piston engine	
<b>Year of Manufacture:</b>	1987	
<b>Date &amp; Time (UTC):</b>	11 July 2006 at 1630 hrs	
<b>Location:</b>	Wick Farm, Layer Marney, Essex	
<b>Type of Flight:</b>	Private	
<b>Persons on Board:</b>	Crew - 1	Passengers - 1
<b>Injuries:</b>	Crew - None	Passengers - None
<b>Nature of Damage:</b>	Left wing buckled, nose landing gear bent backwards, structure dented, engine shock loaded, alternator belt broken	
<b>Commander's Licence:</b>	Private Pilot's Licence	
<b>Commander's Age:</b>	53 years	
<b>Commander's Flying Experience:</b>	200 hours (of which 190 were on type) Last 90 days - 3 hours Last 28 days - 0.5 hours	
<b>Information Source:</b>	Aircraft Accident Report Form submitted by the pilot and AAIB inquiries	

## Synopsis

The pilot, believing that he had an electrical fire, undertook a precautionary landing. During the ground run the nose wheel hit a rut causing the aircraft to turn over on to its back. Both the pilot and passenger were uninjured. An engineering investigation found that the alternator drive belt had failed.

## History of the flight

The pilot carried out the pre-flight check during which he confirmed that there was sufficient oil in the engine and then departed from his home airfield at Andrewsfield on a local cross country flight. After flying for approximately 35 minutes at a height of 1,800 ft the pilot noticed blue

smoke coming out of the forward section of both sides of the engine cowling. At the same time the pilot became aware of a strong smell of 'electrical burning' and reported hearing a change in the engine noise similar to when the magneto checks are carried out. He checked the engine indications, which appeared normal, and noticed that the low voltage warning light was glowing very brightly.

The pilot, believing that he had an electrical fire, decided to make an immediate landing in a large field of wheat directly ahead of the aircraft. As he closed the throttle to idle the smoke appeared to stop; nevertheless, he

made a Mayday call to Andrewsfield Radio on 130.55 Mhz and continued with the precautionary landing. The pilot states that he consulted the emergency checklist for 'fire in flight', but elected to leave the electrical Master Switch ON so that he could operate the flaps and radio. The aircraft was established on a stable approach, with a 5 kt tail wind, and once full flaps were selected, the pilot stated that he turned off the Master Switch and subsequently held the aircraft in the flare until the mainwheels touched down at approximately 50 kt. However, as the nose was lowered the aircraft appeared to come to an abrupt halt and turned over on to its back. The engine stopped as the propeller struck the ground and the pilot exited the aircraft through his door and then assisted the passenger to vacate the aircraft. Shortly afterwards two farmers and the Police and Air Ambulance helicopters arrived to offer assistance. Both the pilot and passenger were unhurt.

#### **Damage to aircraft**

The nose landing gear leg was bent back against the fuselage; the fin, rudder and wings were buckled and distorted; the windscreen was cracked; one blade on the propeller was bent; the engine was shock loaded,

the casing on the alternator had suffered impact damage and the drive belt had failed. There was no evidence of a fire having occurred.

#### **Comment**

From photographs of the accident site and comments from an engineer who inspected the aircraft it was established that the aircraft touched down on all three wheels in a level attitude. The engineer stated that there was a large rut across the field approximately 12 m after the touch down point, which he believes caused the nose landing gear to collapse and the aircraft to turn over. The flaps were found in the retracted position.

Another battery was fitted to the aircraft and its electrical systems were operated for 15 minutes and found to operate normally with no evidence of any electrical burning smells. The engine oil level was found to be satisfactory with no indication of there having been either an oil leak or spillage.

It is believed that the blue smoke and the illumination of the low voltage warning light were both caused when the alternator drive belt failed.