

**ACCIDENT**

<b>Aircraft Type and Registration:</b>	CFM Metal-Fax Shadow Series CD, G-MWRY	
<b>No &amp; Type of Engines:</b>	1 Rotax 503-2V piston engine	
<b>Year of Manufacture:</b>	1991 (Serial no: K162)	
<b>Date &amp; Time (UTC):</b>	8 December 2012 at 1300 hrs	
<b>Location:</b>	Tinnel Farm, Landulph, Cornwall	
<b>Type of Flight:</b>	Private	
<b>Persons on Board:</b>	Crew - 1	Passengers - None
<b>Injuries:</b>	Crew - 1 (Serious)	Passengers - N/A
<b>Nature of Damage:</b>	Damage to forward fuselage, nosewheel, main landing gear, slipper tank, propeller, engine and right wing	
<b>Commander's Licence:</b>	Private Pilot's Licence	
<b>Commander's Age:</b>	57 years	
<b>Commander's Flying Experience:</b>	370 hours (of which 127 were on type) Last 90 days - 8 hours Last 28 days - 2 hours	
<b>Information Source:</b>	Aircraft Accident Report Form submitted by the pilot	

**Synopsis**

The aircraft was taking off from a farm strip when the pilot sensed a reduction in engine power and realised that he was not going to get airborne before impact with a fence and hedge. The aircraft struck the obstacles whilst still on the ground and in a nose-high attitude. The pilot sustained a serious back injury.

**History of the flight**

The pilot intended to embark on a short local flight. The weather was dry and sunny, with a very light breeze from the north, and the grass field, which was about 300 metres long and orientated north-east/south-west, was cut short but was soft and wet. The aircraft commenced its takeoff roll in the north-easterly direction and the nosewheel lifted but,

just as the mainwheels were about to unstick, the pilot detected a slight change in the engine note and the nosewheel dropped back down. He realised that he could not stop before the fence/hedge at the end of the runway, particularly since the last 40% of the runway had a downslope of 1.5° as well as the wet condition. Because he was concerned about going through the hedge feet-first, he kept the throttle open so that he could raise the nose, which he achieved just before impact - his feet cleared the hedge but the underside of the aircraft and his seat did not. He suffered a compression fracture of the number twelve, thoracic vertebra in the collision but noted that a fence wire had travelled up the screen and over his head, and he was of the opinion that, if the nose had been lower, the wire

would probably have struck him in the head. In view of this, weak links have been incorporated in the fencing at the end of the grass strip at Tinnel Farm. The aircraft was extensively damaged.

In his post-accident analysis of the events, the pilot believes that a combination of the very light headwind component, the soft ground and a somewhat forward centre of gravity conspired to reduce safety margins.

### CAA guidance

CAA Safety Sense Leaflet 7c, *Aeroplane Performance*, provides advice on take-offs. In paragraph 6, *TAKE-OFF - POINTS TO NOTE*, it states:

*b) **Decision point:** you should work out the runway point at which you can stop the aeroplane in the event of engine or other malfunctions, e.g. low engine rpm, loss of ASI, lack of acceleration or dragging brakes. Do NOT mentally programme yourself in a GO-mode to the exclusion of all else.*

*If the ground is soft or the grass is long and the aeroplane is still on the ground and not accelerating, stick to your decision-point and abandon take-off. If the grass is wet or damp, particularly if it is very short, you will need a lot more space to stop.*

This leaflet also provides safety factors which are recommended when planning an aeroplane's takeoff performance.