ACCIDENT

Aircraft Type and Registration:	Ikarus C42 FB100 VLA, G-WOLV
No & Type of Engines:	1 Rotax 912 ULS piston engine
Year of Manufacture:	2006
Date & Time (UTC):	16 March 2007 at 1425 hrs
Location:	Lower Upham Airfield, Hampshire
Type of Flight:	Private
Persons on Board:	Crew - 1 Passengers - 1
Injuries:	Crew - None Passengers - 1 (Minor)
Nature of Damage:	Engine, propeller and nose landing gear detached, damage to left wing tip
Commander's Licence:	Commercial Pilot's Licence
Commander's Age:	38 years
Commander's Flying Experience:	588 hours (of which 8 were on type) Last 90 days - 34 hours Last 28 days - 19 hours
Information Source:	Aircraft Accident Report Form submitted by the pilot and additional enquiries by the AAIB

Synopsis

The aircraft was taking off from a grass airstrip. The ground roll had seemed normal but, when airborne, the aircraft appeared reluctant to climb. The left wing dropped, struck the ground and the aircraft cartwheeled to a halt. Both occupants escaped with only a minor injury to the passenger.

History of the flight

The pilot in command of the aircraft was a qualified instructor on conventional light aircraft with an endorsement to instruct on microlight aeroplanes as well. G-WOLV was registered on a Permit to Fly issued through the Popular Flying Association. The purpose of the flight was to familiarise the passenger (an experienced PPL holder) with the aircraft type during a local recreational sortie. Accordingly, the pilot occupied the right seat, although it was not an instructional flight, so that her passenger could better see the instruments from the left: she states that she was perfectly comfortable with this arrangement.

The pilot positioned the aircraft for takeoff close to the beginning of Runway 04 to carryout the power and pre-takeoff checks. She recognised that the windsock was indicating a slight tailwind component (given as 300º at 8 kt by Southampton ATC) and that the takeoff direction was slightly uphill - usual practice at this airfield due to noise restrictions - but this did not concern her unduly.

The passenger was briefed about the short takeoff run and told to expect a high-nose attitude during climb out because the pilot knew that this would be different from his normal experience.

Having done this, the aircraft was lined up and full power applied for takeoff. During the takeoff run, the pilot held the control stick just aft of neutral, glancing at the airspeed indicator to check that it was registering an increase, and waiting for the cues that the aircraft was ready to 'unstick'. As the nosewheel lifted off, she rotated and the aircraft became airborne. Despite the fact that the takeoff run had appeared normal, once airborne the aircraft did not appear to want to climb and, whilst the pilot considered her options, the left wing dropped at a height of about 20 to 30 feet agl. She took normal recovery actions but there was insufficient height available for these to be successful and the aircraft struck the ground in a left wing low/nose-down attitude, cartwheeling through about 270º and detaching the engine/nose gear assembly. The two occupants evacuated using the aircraft door, with a minor injury being suffered by the passenger. The pilot briefly returned to switch off the magnetos. The aircraft had come to rest in an upright attitude, slightly less than half-way along the 648 metre grass runway

Discussion

In a detailed and frank account of the accident, the pilot provided an attempt to explain the apparent reluctance to climb by the aircraft which had appeared to accelerate and rotate normally. She cited the following as possibly influencing events:

1) The wind might have momentarily increased in strength. Although the Southampton METAR at the time gave 300º at 08 kt, varying between 260º and 330º, a report a few hours earlier had the wind gusting up to 23 kt.

2) The upslope on the runway not only may have given the illusion that the aircraft was not climbing normally but might also have resulted in insufficient height to enable the stall recovery action to be successful.

3) Although she recalls that engine rpm was normal during the pre-takeoff checks, there might have been a subtle loss of power during the takeoff run. The engine does not have a selectable carburettor heat control to prevent carburettor icing. Instead pilots are required to check that a minimum oil temperature of 50ºC is displayed before attempting to take off. The pilot is fairly sure that she did this.

4) The aircraft was some 8 kg above the maximum takeoff weight, although she believes that the basic weight of the aircraft may have been 18 kg less than shown on the weight and balance schedule.

5) The pilot also recalled that she had set the pitch trim correctly, since she pointed out the unusual LED display of trim position to her passenger as part of the pre-takeoff checks.