

ACCIDENT

Aircraft Type and Registration:	Skyranger Swift, G-CEUJ	
No & Type of Engines:	1 Rotax 912 ULS piston engine	
Year of Manufacture:	2007 (Serial no: BMAA/HB/548)	
Date & Time (UTC):	14 November 2012 at 1530 hrs	
Location:	Sackville Farm Airfield, Bedfordshire	
Type of Flight:	Private	
Persons on Board:	Crew - 1	Passengers - 1
Injuries:	Crew - None	Passengers - 1 (Minor)
Nature of Damage:	Damage to engine mounts and firewall, propeller and spinner, nose landing gear	
Commander's Licence:	National Private Pilot's Licence	
Commander's Age:	71 years	
Commander's Flying Experience:	235 hours (of which 141 were on type) Last 90 days - 7 hours Last 28 days - 2 hours	
Information Source:	Aircraft Accident Report Form submitted by the pilot	

Synopsis

The aircraft's engine began running abnormally soon after takeoff, so the pilot carried out an immediate return and landing. The landing was fast and heavy, and the aircraft bounced and pitched fore and aft before the nosewheel dug in to soft ground, causing the aircraft to flip over. One of the two occupants suffered minor injuries.

History of the flight

The aircraft was being flown for the first time after replacement of rubber fuel hoses and fuel filters. The engine was ground run before the flight, with fuel pressure and flow appearing normal.

Early that morning the visibility at Sackville Farm was 4,000 m, in mist, although this was forecast to improve during the day. The temperature and dew point were 12° and 9°C respectively and the surface wind was from the south-east at 5 kt. The grass runway was 800 m long and orientated 13/31. Full power was achieved during the takeoff and initial climb but, at about 500 ft, the engine produced what the pilot described as a "surge" in power. The pilot stopped the climb and positioned the aircraft for an immediate return to the airfield. The engine surged again as the aircraft was lined up on final approach to Runway 13 for a precautionary forced landing.

The aircraft arrived at the runway with half flap selected and excess airspeed. Just before touchdown, the pilot switched off the magneto switches in order to avoid complications should there be a further surge in power. The aircraft touched down heavily on the initial part of the runway, which sloped downwards. It bounced a few times before the nosewheel dug in to the grass surface, causing the aircraft to come to a sudden stop and flip forward onto its back. The pilot's passenger suffered minor injuries, but both occupants were able to vacate the inverted aircraft via the side doors.

The pilot reported that ground witness marks indicated the aircraft had been pitching fore and aft during the landing run, and had possibly been travelling on its nosewheel alone at some point. Its motions were probably exaggerated by the undulating surface and pilot-induced oscillations. The nosewheel had dug into soft ground and the nose leg had suffered an overload failure. At the time of reporting, the reason for the abnormal engine running had not been established, although the pilot thought carburettor icing was unlikely given that the aircraft was equipped with a water jacket carburettor heating system.