Stampe SV4C, G-BHFG

AAIB Bulletin No: 2/2004	Ref: EW/G2003/11/09	Category: 1.3
INCIDENT		
Aircraft Type and Registration:	Stampe SV4C, G-BHFG	
No & Type of Engines:	1 Renault 4PO3 piston engine	
Year of Manufacture:	1945	
Date & Time (UTC):	16 November 2003 at 1230 hrs	
Location:	Gloucestershire Airfield, Gloucestershire	
Type of Flight:	Training	
Persons on Board:	Crew - 2	Passengers - None
Injuries:	Crew - None	Passengers - N/A
Nature of Damage:	Damage to propeller, underside of nose cowling and lower surface of right wing	
Commander's Licence:	Airline Transport Pilot's Licence	
Commander's Age:	49 years	
Commander's Flying Experience:	12,345 hours (of which 627 were on type)	
	Last 90 days - 142 hours	
	Last 28 days - 22 hours	
Information Source:	Aircraft Accident Report Form submitted by the pilot	

The flight was planned as an introductory lesson for the student. Weather conditions were fine with good visibility and a surface wind from 310º at 7 to 8 kt. This aircraft has a two place open cockpit with tandem seating; the instructor was seated in the rear seat. The aircraft had not been flown for a period of three weeks prior to the incident but started readily. After a few minutes of running the instructor checked the magnetos and observed a 300 RPM drop in engine speed on the right magneto. Suspecting that oiling of a plug might be the cause of this the engine was run at a higher power setting with the mixture leaned in an attempt to clear the oil. This was apparently successful since, when checked again, the observed drop on each magneto was less than 100 RPM which was considered acceptable.

The aircraft was then taxied to the holding point for Runway 27 where it waited for a period of about ten minutes before receiving take-off clearance. Departures from Runway 27 are required to carry out a noise abatement turn to the right shortly after take off. The takeoff was carried out and the right turn had just been initiated, with the aircraft climbing through 100 feet above aerodrome level (aal), when the instructor noticed that the engine was not developing normal power, the maximum RPM attainable was 1,900 compared to an expected 2,200. Unable to land back on the runway the instructor continued the right turn, climbed to maintain a height of 200 feet aal and decided to return for an immediate landing. ATC were informed and in return advised that Runway 18, a tarmac runway of 800 metres (2,624 feet) length, would be available. The instructor decided that despite the tailwind component an immediate return to Runway 18, the nearest runway, was the best option. A successful landing was carried out but as the aircraft rolled along the runway the engine stopped. Then, as the aircraft decelerated below 10 kt, it slowly ground looped to the left and tipped forward onto its nose despite the instructor's attempts to prevent this with full right rudder.

The aircraft has a fully castering tailwheel which is not connected to the rudder. Brakes are applied to both mainwheels together by means of a hand operated lever or can be applied individually at the limit of each rudder pedal travel.

In these circumstances, with a tailwind component and no engine power available, as the aircraft decelerated to a forward speed equal to that of the wind from behind, the flying controls would have become completely ineffective. With no inherent directional stability or rudder authority available any wind effect on the airframe could cause a swing in either direction. The only available directional control aid for the pilot would be the application of differential braking but any braking action would risk causing the aircraft to 'nose over'.

The pilot thought that the partial power loss after takeoff was probably caused by plug fouling during the prolonged wait at the holding point.