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**ACCIDENT**

<b>Aircraft Type and Registration:</b>	Stampe SV4C (Modified), G-BEPC	
<b>No &amp; Type of Engines:</b>	1 De Havilland Gipsy Major 10 Mk 2 piston engine	
<b>Year of Manufacture:</b>	1946	
<b>Date &amp; Time (UTC):</b>	5 April 2009 at 1205 hrs	
<b>Location:</b>	Chichester (Goodwood) Aerodrome, West Sussex	
<b>Type of Flight:</b>	Private	
<b>Persons on Board:</b>	Crew - None	Passengers - None
<b>Injuries:</b>	Crew - None	Passengers - N/A
<b>Nature of Damage:</b>	Forward fuselage and wings damaged, landing gear detached	
<b>Commander's Licence:</b>	Private Pilot's Licence	
<b>Commander's Age:</b>	63 years	
<b>Commander's Flying Experience:</b>	261 hours (of which 159 were on type) Last 90 days - 21 hours Last 28 days - 8 hours	
<b>Information Source:</b>	Aircraft Accident Report Form submitted by the pilot	

**Synopsis**

After hand-swinging of the propeller by the pilot, the engine started and accelerated. The aircraft overcame the handbrake and rotated to the right a few times before briefly becoming airborne. The aircraft then contacted trees on the western boundary of the airfield and came to rest, causing significant damage in the process. The pilot stated that he had probably inadvertently closed the 'dummy' mixture lever believing it to be the throttle, thereby leaving the throttle open. There was no body in the aircraft during the engine start to react to the situation and close the throttle.

**History of the flight**

The pilot had just refuelled the aircraft and positioned it on the grass to the west of the tower. He then leant into the rear cockpit, from the left side, to check that the handbrake was fully on, the rear magneto switch was on No 2, the front magneto switch was on both, a bungee was securely holding the control stick in the fully aft position, the engine throttle was closed and throttle friction was tight. Having completed these checks, the pilot then rotated the oil filter through 90° (standard practice on this engine) prior to commencing an engine start by hand swinging the propeller. There was nobody in the aircraft when the pilot attempted the engine start.

The pilot began to hand-swing the propeller, the engine started immediately and accelerated commensurate with an open throttle. The power produced by the engine was enough to defeat the handbrake, the aircraft moved forward and rotated to the right about its right wheel. After a few gyrations the aircraft became airborne, but it collided with trees at the airfield's western boundary. The aircraft finally came to rest a few metres beyond the western perimeter fence. Significant damage was sustained to the forward fuselage and the wings, both landing gears had separated but there was no fire.

The pilot assessed that, when he reached down into the left side of the cockpit to ensure that the throttle was in the fully closed position, he may have inadvertently operated the 'dummy' mixture lever which is immediately adjacent and to the right of the throttle lever. The throttle is taller and stands proud of the mixture lever to differentiate the two, but the mixture lever serves no purpose as the mixture on the engine fitted to G-BEPC is permanently wired to fully rich.

As the engine is shut down, following a flight, the throttle is routinely moved to fully open as the magnetos are switched off, before then being closed as part of the shutdown procedure. The pilot states that it is possible that the throttle had been left open following the previous flight and that his operation of the 'dummy' mixture lever in the cockpit led to the throttle remaining open when the propeller was subsequently hand swung.

The pilot also stated that he had considered the use of chocks was unnecessary as the engine produces little power at idle.

## Discussion

The pilot, in his candid explanation of the sequence of events, states that he most likely operated the wrong lever in the cockpit when he checked if the throttle was in the closed position, leaving the throttle in the open position. The engine was started by the pilot hand swinging the propeller, but there was no body in the cockpit to monitor the engine start. Had there been someone suitably briefed in the cockpit, that person would have been in a position to realise that there was a problem and to react to the situation, closing the throttle and bringing the aircraft to a halt. The lack of a suitably briefed person in the cockpit, during the start sequence, led to the aircraft becoming uncontrollable. In this case the damage was limited to the aircraft itself.

The CAA, in their Safety Sense Leaflet 1 '*Good Airmanship*', recommend under paragraph 19 '*Starting Engine*':

*'b. Never attempt to hand swing a propeller (or allow anyone else to swing your propeller) unless you know the proper, safe procedure for your aircraft and situation, and there is a suitably briefed person at the controls, the brakes are ON and/or the wheels are chocked. Check that the area behind the aircraft is clear.'*

*'c. Use a Check List which details the correct sequence for starting the engine. Make sure the brakes are ON (or chocks in place) and that avionics are OFF before starting engine(s).'*