

ACCIDENT

Aircraft Type and Registration:	Hurricane 315, G-OHUR	
No & Type of Engines:	1 Rotax 503 DCDI piston engine	
Year of Manufacture:	2018 (Serial no: 250218)	
Date & Time (UTC):	8 September 2019 at 1045 hrs	
Location:	Stoke Airfield, Kent	
Type of Flight:	Private	
Persons on Board:	Crew - 1	Passengers - None
Injuries:	Crew - None	Passengers - N/A
Nature of Damage:	Propeller detached, left wing and fuselage damaged	
Commander's Licence:	Private Pilot's Licence	
Commander's Age:	58 years	
Commander's Flying Experience:	1,375 hours (1,100 on microlight aircraft of which 35 were SSDR ¹) Last 90 days - 16 hours Last 28 days - 9 hours	
Information Source:	Aircraft Accident Report Form submitted by the pilot	

Synopsis

Shortly after taking off on a flight test to check the propeller setting, the engine started to vibrate and run roughly. The pilot carried out a forced landing on salt marshes during which the aircraft pitched over and came to rest inverted. The cause of the vibration could not be positively determined, but it is possible that carburettor flooding led to engine vibration and loss of power.

History of the flight

The pilot was undertaking a series of flight tests from Stoke Airfield, near Rochester, Kent to investigate the optimum propeller pitch setting. Following a successful circuit using a pitch setting of 9°, he set the pitch at 6° and carried out engine power checks, which included a magneto check at 4,000 rpm, prior to his next flight. The takeoff was normal with the engine reaching 5,600 rpm; however, at approximately 50 ft (agl) the engine note changed, and the pilot became aware of an "uncharacteristic" significant vibration. Movement of the throttle made no difference. The pilot made a gentle turn to avoid overflying nearby paddocks and a marina, and climbed to between 100 to 150 ft. The engine continued to run roughly and lost

Footnote

¹ Single Seat Deregulated Aircraft.

power. Whilst he was diagnosing the problem, the pilot became aware that the airspeed was decaying with the early onset of a stall and therefore carried out a forced landing on the salt marshes next to the river Medway.

On landing, one or both the mainwheels dug into the ground causing the aircraft to gently pitch over, coming to rest inverted (Figure 1). The pilot was initially trapped but was assisted out of the cockpit by a passer-by. During the accident the propeller detached, and the aircraft sustained extensive damage to the landing gear, fuselage and left wing. The canopy was distorted making it difficult to vacate the aircraft.



Figure 1

G-OHUR inverted on the salt marshes (picture courtesy of the owner)

Technical investigation

G-OHUR was classified as a SSDR microlight aircraft and as such it could be designed and constructed privately without the airworthiness oversight of either a member association or the CAA. The pilot had designed and built the aircraft, which was based on a scaled down version of the Hawker Hurricane (Figure 2). The aircraft first flew in May 2018 and had flown 14 hours.



Figure 2

Hurricane 315, G-OHUR (picture courtesy of the owner)

Following the accident, the pilot dismantled and examined the engine but could find no evidence of a component failure within the engine or reduction gearbox, though there was an abnormal amount of oil residue present in the crankcase beneath both pistons.

The pilot felt that the rough running and vibration experienced during the accident flight were similar to that of an engine running with an overly rich mixture. However, while one spark plug was wet with fuel, the colour and condition of all the spark plugs indicated that the engine had been running at the correct mixture.

Although the propeller had been damaged during the impact, the angle of both propeller blades was still set at 6°.

Conclusion

From the condition of the spark plugs, and the oil residue in the crankcase, the pilot was of the opinion that the engine had been running correctly until the onset of significant over-fuelling caused by carburettor flooding. He believed that this caused the vibration experienced immediately after takeoff and the loss of engine power. The cause of the flooding could not be determined.