

ACCIDENT

Aircraft Type and Registration:	Team Minimax 91, G-CGGX	
No & Type of Engines:	1 Rotax 447 piston engine	
Year of Manufacture:	2011 (Serial no: PFA 186-14421)	
Date & Time (UTC):	16 November 2014 at 1145 hrs	
Location:	Near Ruthin, Denbighshire	
Type of Flight:	Private	
Persons on Board:	Crew - 1	Passengers - None
Injuries:	Crew - 1 (Minor)	Passengers - N/A
Nature of Damage:	Severe damage to right fuselage area, landing gear structure and engine mountings	
Commander's Licence:	National Private Pilot's Licence	
Commander's Age:	49 years	
Commander's Flying Experience:	271 hours (of which 84 were on type) Last 90 days - 10 hours Last 28 days - 0 hours	
Information Source:	Aircraft Accident Report Form submitted by the pilot	

Synopsis

The pilot had reinstalled the aircraft's engine following an overhaul and carried out a ground run in accordance with the manufacturer's requirements. The pre-departure power checks were carried out and the pilot noticed that the maximum rpm was 5,800 rpm as opposed to the normal 6,100 rpm, but he elected to take off anyway. Shortly after becoming airborne, engine power was lost and during a gentle right turn towards a suitable field the aircraft entered an incipient spin to the right and impacted the ground.

History of the flight

The pilot built the aircraft and installed a Rotax 447 engine fitted with a single carburettor, and carried out formal training to fly it. After approximately 100 hrs of flying he noticed that there appeared to be a reduction in engine power and sent the engine to an engine specialist for investigation. When the engine was returned the problem was recorded as a 'stuck piston ring'. The pilot refitted the engine and carried out the manufacturer's recommended ground running prior to flying. He noticed that the engine still did not appear to be producing the normal power and that the maximum rpm was 5,800 rpm instead of the 6,100 rpm to which he was accustomed. It was also difficult to start, hot or cold. He decided to fly the aircraft to see if this would clear any problem and carried out the pre-flight checks.

The weather included a light wind from the north north-west with visibility 7 km, overcast cloud and an OAT of 10°C and a dew point of 9°C. The aircraft weight was 445 lbs with a maximum permitted takeoff weight of 590 lbs. The pilot selected the maximum diagonal distance across the rectangular field which gave a takeoff direction into wind and a distance available of approximately 300 m. He selected maximum power and the aircraft accelerated more slowly than normal across the field, but became airborne after approximately $\frac{3}{4}$ of the available distance; he would normally expect to become airborne in less than 150 m. Climb performance was very poor and, at what witnesses estimated as about 60 ft, there was a total loss of power. The pilot lowered the nose and made a gentle right turn towards a field in which to perform a forced landing.

During the turn the right wing stalled and dropped, causing the aircraft to enter an incipient spin. The pilot raised the wing and reduced the steep nose-down attitude prior to impact with the grass surface of a field. He was secured by a four-point restraint harness and was able to brace himself and cross his hands in front of his face before the aircraft struck the ground. The aircraft was severely damaged but there was no fire and the pilot was able to isolate the fuel and electrical systems before exiting the aircraft unaided, sustaining only minor injuries despite severe disruption to the aircraft structure. Emergency services were not called to attend but the pilot was driven to hospital by his wife.

The pilot concluded that the sudden loss of engine power resulted in a loss of airspeed which, when the right turn was initiated, led to the incipient spin. He could not recall his recovery actions but remembered the steep nose-down attitude reducing. He considered that given the engine was not achieving its normal rpm in the power check the takeoff should not have been attempted, and when the engine lost power he should not have attempted the turning manoeuvre. No cause for the loss of engine power was determined.