INCIDENT

Aircraft Type and Registration:	Rotorsport UK MTOsport, G-PAFF	
No & Type of Engines:	1 Rotax 912ULS piston engine	
Year of Manufacture:	2011 (Serial no: RSUK/MTOS/039)	
Date & Time (UTC):	28 December 2013 at 1540 hrs	
Location:	Graveley Airfield (farm strip), Hertfordshire	
Type of Flight:	Private	
Persons on Board:	Crew - 1	Passengers - None
Injuries:	Crew - None	Passengers - N/A
Nature of Damage:	Rotor blade indentation and rudder tip split	
Commander's Licence:	Private Pilot's Licence	
Commander's Age:	58 years	
Commander's Flying Experience:	330 hours (of which 330 were on type) Last 90 days - 5 hours Last 28 days - 3 hours	
Information Source:	Aircraft Accident Report Form submitted by the pilot and further enquiries by the AAIB	

Synopsis

The pilot had just landed from a previous flight and repositioned the aircraft for an immediate takeoff. As he pulled the control column back and advanced the throttle he felt a heavy jolt through the controls. He immediately aborted the takeoff and stopped the aircraft to assess the situation. It became clear that the rotor blades had struck and damaged the top of the rudder. The rotor strike was caused by an excessive rearward tilt of the rotor disc, due to insufficient rotor speed combined with the acceleration of the aircraft.

History of the flight

The pilot had carried out several previous flights during the afternoon and had repositioned from his fourth landing for an immediate takeoff. Thinking that the aircraft had enough rotor rpm, he pulled back on the control column and applied full power. As he did so he felt a heavy jolt back through the controls. Realising something was wrong he aborted the takeoff and brought the aircraft to a halt in order to assess the situation. Upon inspection of the aircraft it was apparent that the rotor blades had struck the top of the rudder towards the trailing edge causing damage to both blades and the rudder. There was no other damage to the aircraft and no injuries were sustained.

Analysis

The pilot, in his post-incident analysis, realised that he had not checked the rotor rpm gauge prior to pulling the control column back. He estimated that he may only have had a rotor

speed of between 120 and 140 rpm. This was below the safe minimum 200 rpm required for takeoff. The pilot also noted that he was not using the rotor pre-rotator at the time. The low rotor rpm, aft movement of the stick and the increase in engine power (and therefore thrust and acceleration), combined to cause the rotor disc to tilt rearwards low enough to strike the top of the rudder.