ACCIDENT

Aircraft Type and Registration:	Mooney M20F Executive, G-CEJN	
No & Type of Engines:	1 Lycoming IO-360-A1A piston engine	
Year of Manufacture:	1966 (Serial no: 670216)	
Date & Time (UTC):	17 April 2016 at 0900 hrs	
Location:	Wellesbourne Mountford Airfield, Warwickshire	
Type of Flight:	Private	
Persons on Board:	Crew - 1	Passengers - None
Injuries:	Crew - None	Passengers - N/A
Nature of Damage:	Damage to right flap, right aileron tip and tail skid	
Commander's Licence:	Commercial Pilot's Licence	
Commander's Age:	45 years	
Commander's Flying Experience:	1,180 hours (of which 467 were on type) Last 90 days - 43 hours Last 28 days - 16 hours	
Information Source:	Aircraft Accident Report Form submitted by the pilot and additional enquiries by the AAIB	

Synopsis

After a normal touchdown, the right Main Landing Gear (MLG) collapsed. Examination revealed that a rod which actuates the right MLG was bent and the downlock had not overcentred.

History of the flight

The aircraft had taken off for a local flight to check system serviceability prior to its forthcoming annual inspection. As it returned to Wellesbourne Mountford Airfield, the pilot lined up to land on Runway 18 with a light southerly wind prevailing. He flew the approach at the recommended speed of 80 mph and checked that the single green GEAR DOWN light had illuminated and that the physical check of the mechanism using a window in the cockpit floor also indicated that it was in the correct position. He also acknowledged a call from the control tower to "Check 3 greens".

The aircraft touched down gently on the threshold but, as it slowed, the pilot sensed that the right wing was dropping, so he applied left aileron whilst simultaneously pulling on the mixture control to shut down the engine. The tailskid and right flap contacted the runway and the aircraft veered to the right onto the grass where it came to a halt. On vacating the aircraft, the pilot could see that the right MLG had collapsed.

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Engineering investigation

The original Mooney M20 series of aircraft had manual extension and retraction of the landing gears, although many owners retro-fitted an electrical actuation system to reduce work for the pilot – G-CEJN was one such aircraft. A single electric motor operates rods to move the nose and MLG. The engineer who maintained the aircraft for some time examined it after the accident and noted that the actuating rod for the right MLG was bent, which could indicate that the gear had not been in its overcentre locked condition and had attempted to react to the landing loads through the retraction rod. It was also possible that slight distortion of the rod due to some previous event might have been responsible for the failure to overcentre. Both the indicator light and the mechanism checking window do not provide confirmation that any of the three gears are locked down, only that the actuating rods are in the correct position.

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