

ACCIDENT

Aircraft Type and Registration:	Jodel D150 Mascaret, G-BHEG	
No & Type of Engines:	1 Continental Motors Corp O-200-A piston engine	
Year of Manufacture:	1964 (Serial no: 46)	
Date & Time (UTC):	27 October 2012 at 1323 hrs	
Location:	Dunkeswell Airfield, Devon	
Type of Flight:	Private	
Persons on Board:	Crew - 1	Passengers - None
Injuries:	Crew - None	Passengers - N/A
Nature of Damage:	Damage to left wing spar, undercarriage, fuel tank and propeller	
Commander's Licence:	Private Pilot's Licence	
Commander's Age:	56 years	
Commander's Flying Experience:	721 hours (of which 470 were on type) Last 90 days - 7 hours Last 28 days - 0 hours	
Information Source:	Aircraft Accident Report Form submitted by the pilot and further discussions with the Light Aircraft Association and the pilot	

Synopsis

Whilst climbing out after takeoff, the pilot heard a thud and saw that the landing light cover on the left wing leading edge had failed. He experienced severe control difficulties and an attempted forced landing back at the airfield resulted in the left wing striking the ground, slewing the aircraft to a halt on the grass. The landing light cover had been made using an inappropriate method.

History of the flight

The aircraft had taken off from Runway 35R at Dunkeswell when, at a height of approximately 400 ft, the pilot heard a thud. From the corner of his eye he

saw that the landing light cover on the left wing leading edge had split along the centreline of the leading edge with the upper half deflected upwards and the lower half downwards. This had the effect of funnelling the airflow into the wing structure and, because there was a gap underneath the front spar which allowed air into the rest of the structure, he could see the fabric covering bulging under the pressure.

The pilot levelled out, intending to do a right hand circuit to land but found that, despite full control deflection, he was unable to prevent the aircraft from yawing and rolling to the left. With the attitude approaching 90°

of bank and the height decreasing, he throttled back and the controls started to respond, although somewhat sluggishly. After getting the wings nearly level, he levelled out at about 50 ft but still felt that he had almost no directional control and that attempts to apply power in anything other than short bursts made the aircraft very unstable. The pilot radioed a MAYDAY call and found that, fortuitously, the aircraft was heading back in the direction of Dunkeswell. He felt that he might be able to reach Runway 17, albeit downwind but, as he lowered the nose, and despite full opposite control application, the aircraft started to turn left towards some taxiing aircraft on Runway 23/05. He pulled the nose up to clear the aircraft on the ground and then lowered it again to regain airspeed. This had the effect of yawing the aircraft to the left again and the left wing struck the ground, slewing the aircraft around to a halt on the grass runway at the end of Runway 17. The pilot estimates that the entire incident had lasted about four minutes or less.

Upon examination, it was found that the landing light cover had been made of polycarbonate material bent around the leading edge profile. This induced residual stresses in the material and probably led to cracking and failure; when this occurred, the material reverted to its natural, flat shape. The correct component uses perspex moulded to the shape of the leading edge. The Light Aircraft Association (LAA) has published an article about this accident in the January 2013 edition of their magazine *Light Aviation* in which the pitfalls of making the cover using an incorrect method are highlighted as well as considerable discussion about the possible effects on controllability should such a failure occur. An informal query to the French accident investigation authority, the BEA, suggested that they were not aware of any accidents caused by such a failure.