SERIOUS INCIDENT

Aircraft Type and Registration:	Auster J5G Cirrus Autocar, G-ARKG	
No & Type of Engines:	1 Blackburn Cirrus Major III piston engine	
Year of Manufacture:	1952 (Serial no: 3061)	
Date & Time (UTC):	30 November 2013 at 1030 hrs	
Location:	Near Oakham, East Midlands	
Type of Flight:	Private	
Persons on Board:	Crew - 1	Passengers - 1
Injuries:	Crew - None	Passengers - None
Nature of Damage:	Aileron cable broken	
Commander's Licence:	Private Pilot's Licence	
Commander's Age:	44 years	
Commander's Flying Experience:	177 hours (of which 9 were on type) Last 90 days - 5 hours Last 28 days - 0 hours	
Information Source:	Aircraft Accident Report Form submitted by the pilot	

Synopsis

The aircraft was engaged in practising steep turns when the right aileron cable broke. After a safe landing, it was found that the cable had failed because it had short-circuited the contacts of a wind-driven generator in the right wing leading edge. The generator had moved rearwards because of slackening of the grip of its mounting clamp.

History of the flight

The pilot and a friend had been airborne for about 55 minutes when they decided to practise some steep turns at a height of 2,000 ft. The plan was to complete one turn to the right first and then reverse the turn. The first turn, at 45º angle of bank, was normal but when the pilot applied left aileron to commence the second turn, he felt the right aileron cable break and could see it hanging slack outside the cockpit window. He discontinued the turn and recovered to wings level.

After a discussion with his passenger, who was an experienced pilot, he performed a test which confirmed that he could move the left aileron but not the right. The pilot was reluctant to use the ailerons for fear of entering an irrecoverable spiral dive. The aircraft was about 8 miles from its home field and he was able to perform a gentle, flat turn using the rudder to line up for a straight-in approach to the runway. A normal three-point landing was performed and no damage was incurred.

After landing, investigation revealed that the cable had broken at a point behind a wind-driven generator located in the right wing leading edge. Closer inspection showed that the cable strands had melted and that the generator itself was loose in its clamp and could be moved backwards and forwards. It was surmised that the generator had moved rearwards until its positive terminal touched the aileron cable. Subsequent tests by the Light Aircraft Association (LAA) suggested that the burning damage had occurred over a number of contacts rather than a single event.

The generator was loose in its clamp because a cork gasket between the clamp and the generator body was missing. An Auster Service Bulletin, Issue 22, published in 1951 had alerted owners to the potential problems of mounting the generator too far back, fouling the aileron cable and causing shorting. It advised that the company was '*drawing up a modification to obviate this trouble*', details of which would be given in a subsequent Bulletin. In the event, a redesigned generator was specified and the promised modification did not materialise. G-ARKG is one of the few thought to be still fitted with the earlier type of generator.

A fuller account of this incident can be found in the February 2014 issue of the LAA's magazine *Light Aviation*.