ACCIDENT

Aircraft Type and Registration:	Reims Cessna F172N, G-LTEE
No & Type of Engines:	1 Lycoming O-320-H2AD piston engine
Year of Manufacture:	1978 (Serial no: 1772)
Date & Time (UTC):	5 May 2014 at 1339 hrs
Location:	Fairoaks Airport, Surrey
Type of Flight:	Private
Persons on Board:	Crew - 1 Passengers - 1
Injuries:	Crew - 1 (Minor) Passengers - 1 (Minor)
Nature of Damage:	Damage to left wing spar, wing and body panels, tail, propeller and windscreen
Commander's Licence:	Private Pilot's Licence
Commander's Age:	55 years
Commander's Flying Experience:	113 hours (of which 7 were on type) Last 90 days - 10 hours Last 28 days - 3 hours
Information Source:	Aircraft Accident Report Form submitted by the pilot and further enquiries by the AAIB

Synopsis

After a normal touchdown the aircraft started drifting to the right with a crosswind from the left. The pilot applied left rudder but the aircraft departed the runway surface to the right and flipped inverted as it came to rest. The pilot assessed that he may not have been holding sufficient into-wind left aileron after touchdown.

History of the flight

The pilot had trained on the Cessna 152 and had flown Piper PA-28s since gaining his licence in 2012. He had recently converted to the Cessna 172. During a cross-country flight from Dunkeswell to Fairoaks he noticed that he needed to hold a constant left aileron input to maintain wings level. This was a known problem with this aircraft and the rudder trim had been set almost full left by previous pilots in an attempt to relieve the amount of left aileron required.

On arriving at Fairoaks the wind was reported as 12 kt from 180º. The pilot carried out an overhead join, selected two stages of flap and turned onto final for Runway 24. He then realised he was too high and initiated a go-around. On the pilot's second approach he was also too high so carried out another go-around. During the third approach he extended his downwind leg to allow himself more time on final. Because of the crosswind he decided to leave the flaps up and approach at about 85 kt. The aircraft touched down normally on the

centreline and the pilot initially allowed the aircraft to decelerate without touching the brakes. At about 320 m from the runway threshold, the aircraft started to drift to the right[1] (Figure 1); this was possibly coincident with initial brake application. The pilot applied left rudder but the aircraft continued to drift to the right and departed the runway surface at about 30 kt. The ground was soft and boggy causing the aircraft to decelerate quickly as the nosewheel ploughed the ground to a depth of about 30 cm. Just as the aircraft was about to stop it pitched forwards onto its back. The pilot and his passenger were left hanging upside down but were able to release their harnesses and exit through the doors.

Figure 1

Aircraft ground track from GPS data (*image ©Google Earth*)

Pilot's assessment of the cause

The pilot could not recall if he had into-wind left aileron applied after touchdown, but he suspected that he did not have sufficient left aileron applied. He thought the wind had lifted the left wing slightly, and this combined with the braking caused the right brake to be more effective than the left, causing the right turn. He also considered that whatever was causing the right roll in-flight may have also contributed to the left wing lifting.

Footnote

[1] The aircraft's GPS track and groundspeed had been recorded on the pilot's tablet device using Skydemon software.