

ACCIDENT

Aircraft Type and Registration:	Piper PA-28-161 Cherokee Warrior II, G-HAMR	
No & Type of Engines:	1 Lycoming O-320-D3G piston engine	
Year of Manufacture:	1984 (Serial no: 28-8416077)	
Date & Time (UTC):	13 May 2015 at 1230 hrs	
Location:	Membury Airfield, Berkshire	
Type of Flight:	Private	
Persons on Board:	Crew - 1	Passengers - 1
Injuries:	Crew - None	Passengers - N/A
Nature of Damage:	Landing gear detached, damage to propeller, wings and fuselage underside	
Commander's Licence:	Private Pilot's Licence	
Commander's Age:	51 years	
Commander's Flying Experience:	152 hours (of which 152 were on type) Last 90 days - 3 hours Last 28 days - 2 hours	
Information Source:	Aircraft Accident Report Form submitted by the pilot	

Synopsis

After landing on a narrow runway, the brakes appeared to the pilot to be ineffective. In order to avoid running off the end of the runway the pilot steered the aircraft to the right, where it struck some concrete blocks, resulting in the landing gear being torn off.

History of the flight

The aircraft was engaged on a series of cross-country flights involving four aircraft from an Elstree-based flying club and had arrived at Oaksey Park, in Wiltshire, without any problems. The next leg was to Membury Airfield and the pilot conducted a walk-round check of the aircraft before starting the engine and taxiing to a point near the runway, where he carried out a power check. The brakes were applied several times during taxiing and the aircraft was also held against the brakes while full power was applied.

The takeoff and flight to Membury were uneventful and, after over-flying the airfield, the aircraft joined a right-hand circuit for Runway 05. Touchdown was normal, at a speed of around 70 kt, and the pilot allowed the aircraft to settle before applying the brakes. There appeared to be no retardation so the pilot pressed harder on the pedals, but to no avail. The passenger, in the right-hand seat, then attempted to apply the brakes but again they appeared ineffective. By now the end of the runway, which terminated in an earth bank, was approaching and the pilot managed to "instinctively" steer the aircraft the right. However,

the right main landing gear then struck one of a series of concrete blocks, placed there to prevent vehicular traffic from an adjacent access road driving onto the runway. This caused the aircraft to swing to the right and resulted in the landing gears being torn off before the aircraft came to rest against a wire fence. Both occupants were uninjured and, having shut off the fuel and electrics, exited the aircraft unaided.

The investigation

The collision with the concrete blocks had torn off the landing gears and had also caused significant damage to the aircraft underside; the aircraft was subsequently assessed as being damaged beyond economic repair. A representative of the insurance company noted that the hydraulic reservoir that supplied the braking system was empty. However, this was most probably accounted for by the right-hand brake line being severed when the right gear struck one of the blocks; splashes of hydraulic fluid were observed on an adjacent block. In addition, skid marks on the ground were found, indicating that the wheels were locked at the point where the aircraft departed the runway.

Airfield information

The aircraft landed on the asphalt Runway 05 at Membury; this is 650 m long but only 8 m wide and lies between the access road to the right and the 05 grass runway to the left. The latter is the same length as the asphalt runway but 30 m wide. The decision to land on the asphalt runway was made during a conversation between the crews of all four aircraft before they departed Oaksey Park. G-HAMR was the last aircraft to land at Membury and the pilot commented that he was aware that the preceding aircraft had parked on a grass area to the left of the runway end.

Discussion

The brakes on this aircraft type are simple and the left and right callipers are effectively independent, with the fluid reservoir being the only common component; a dual brake failure is thus considered unlikely. In this case available evidence, mainly in the form of skid marks from both main landing gear wheels, suggested that the brakes were functioning prior to the collision with the concrete blocks.

The runway was of adequate length for landing although the width, at 8 m, was relatively narrow. It is possible that the resulting visual perspective presented to the pilot on final approach made the runway appear longer than it actually was, such that, after touchdown, the end of the runway was approaching faster than he expected. The pilot later commented that, although the grass area to the left of the end of the runway may have been a safer option to aim for, he was deterred by the recently arrived aircraft that were parked there.