

Aircraft Type and Registration:	Piper PA-28-140 Cherokee, G-BCGT	
No & Type of Engines:	1 Lycoming O-320-E3D piston engine	
Year of Manufacture:	1968	
Date & Time (UTC):	17 April 2005 at 1115 hrs	
Location:	Compton Abbas, Wiltshire	
Type of Flight:	Private	
Persons on Board:	Crew - 1	Passengers - 2
Injuries:	Crew - None	Passengers - None
Nature of Damage:	Nose landing gear collapsed, propeller bent, engine shock loaded, right wing tip buckled	
Commander's Licence:	Private Pilot's Licence	
Commander's Age:	57 years	
Commander's Flying Experience:	225 hours (of which 136 were on type) Last 90 days - 6 hours Last 28 days - 3 hours	
Information Source:	Aircraft Accident Report Form submitted by the pilot	

Synopsis

The aircraft touched down heavily and bounced following an approach to Runway 26 at Compton Abbas, where the surface wind at the time of the accident was reported as 15 kt from the south-southwest. The nose landing gear collapsed during the subsequent touchdown and second bounce. The propeller, engine and right wingtip were also damaged. The pilot considered that the use of full flap during the final approach reduced his ability to control the aircraft in a strong crosswind, and that he should have executed a missed approach immediately after the first touchdown.

History of the flight

The aircraft was on a private flight from Shoreham to Compton Abbas, which the pilot had visited on several occasions. He was accompanied by two passengers, who had flown with him previously. On initial contact with Compton Abbas Radio, the pilot was advised to join downwind for a right hand circuit to Runway 26 and to report on final approach.

As he turned onto the final approach at approximately 500 feet agl, the pilot noticed a significant southerly wind component and, after reporting on final, was advised that the surface wind was "SOUTH-SOUTHWEST AT 15 KT". In his statement to the AAIB the pilot commented that he felt comfortable about landing in these conditions, which he had done frequently. Judging that the aircraft was slightly high, he selected full flap and continued the approach at 70 kt, using a "crabbing" technique to allow for the crosswind. The approach proceeded normally until, at approximately 100 feet agl, the aircraft encountered turbulence and began to sink more rapidly than expected. The aircraft landed heavily, bounced and touched down again. The pilot was unable to prevent a second bounce and subsequent heavy touchdown, during which the nose landing gear collapsed. The aircraft continued along the ground in a nose down attitude for a distance of approximately 50 metres before coming to rest, upright, with damage to the propeller and right wingtip, which had come into contact with the runway during the final touchdown. The pilot switched off the fuel and electrical systems and all of the occupants vacated the aircraft without injury.

Airfield

Compton Abbas is a grass airfield, situated on a ridge that runs east to west at an elevation of 811 feet above mean sea level. The single, well maintained grass Runway 08/26 is 803 metres long. The UK Aeronautical Information Publication notes that a line of trees along its southern boundary will cause turbulence on the approach to either runway when the wind has a southerly component. This advice is repeated in commercially available airfield guides.

Aircraft handling

The Cherokee 140 has flaps actuated manually using a handbrake-type lever mounted on the floor between the front seats. The lever has detents in four positions, corresponding to UP, 10°, 25° and 40°. Instructors familiar with the type commented that the aircraft is more controllable in a crosswind with 25° of flap selected. The 40° flap setting is intended to create extra drag and to reduce landing speed, but its use is also likely to degrade the go-around performance of a heavily loaded Cherokee 140. The operating handbook published by the manufacturer does not give any specific guidance on these issues, but states that the maximum crosswind component in which a landing was demonstrated during certification was 17 kt.