

ACCIDENT

Aircraft Type and Registration:	Piper PA-28R-180 Cherokee Arrow, G-OKAG	
No & Type of Engines:	1 Lycoming IO-360-B1E piston engine	
Year of Manufacture:	1967	
Date & Time (UTC):	23 September 2005 at 1850 hrs	
Location:	Chirk, North Wales	
Type of Flight:	Private	
Persons on Board:	Crew - 1	Passengers - 1
Injuries:	Crew - None	Passengers - None
Nature of Damage:	Both wings, propeller and fuel tank	
Commander's Licence:	Private Pilot's Licence	
Commander's Age:	41 years	
Commander's Flying Experience:	350 hours (of which 80 were on type) Last 90 days - 15 hours Last 28 days - 7 hours	
Information Source:	Aircraft Accident Report Form submitted by the pilot	

History of the flight

The pilot was carrying out a flight from Stapleford Aerodrome near London to Llandegla Airfield near Ruthin in Wales. The weather forecast for the route was: surface wind from 240° at 8 kt becoming northerly, CAVOK but with occasional showers with visibility reducing to 7,000 m and cloudbase 3,000 ft reducing to 1,000 ft in the showers.

The transit was flown between 2,000 ft and 3,000 ft and was uneventful until nearing the intended destination. When approximately 10 nm from Llandegla, the weather there deteriorated and the pilot elected to divert to the private airfield at Chirk. His flight guide showed the airfield had two runways but, with the prevailing wind conditions, Runway 19 would be the more suitable for

landing. That runway was 500 m in length and 20 m wide with a grass surface and an uphill slope. Earlier in the day the pilot had contacted both Llandegla and Chirk Airfields by telephone to confirm their availability and any special instructions.

On arrival at Chirk, the pilot made an overhead join followed by an orbit of the field to familiarise himself with the layout. He had not operated from Chirk before and established that the surface wind indicated by the windsock was 230°/10 kt. Having completed a circuit and configured the aircraft with full flap, the pilot made an approach with a go-around before committing to a landing. The second approach was made with full flap and an approach airspeed of 75 mph. The approach and

flare were normal with the aircraft touching down within the first 60 m of the runway. When the wheel brakes were applied, the aircraft skidded along the grass surface but the pilot was able to maintain directional control. He pumped the brake pedals and combined with the upslope, the aircraft slowed down but with insufficient runway remaining, the pilot realised the aircraft would slowly overrun the runway. He steered towards what appeared the least solid obstruction which was a wire fence to the right of a 'Portacabin'. Just prior to striking the obstacles, the pilot began isolating the electrical services but the propeller and left wing struck the Portacabin; then, as the aircraft slewed to the left, the right wing contacted a fence post. The pilot and his passenger were uninjured. The pilot carried out the emergency shut down drills before he and his passenger vacated the aircraft through the normal exit.

Following the accident, the pilot noticed that the wind direction indicated by an industrial chimney adjacent to the airfield showed a surface wind direction of about 270°. He was informed that due to the local geography, variations in wind direction at height are common at Chirk. Later, when visiting the site after the accident, he noticed the windsock showed a westerly direction whilst the chimney smoke was being blown by a northerly wind.

Analysis

Before leaving Stapleford the pilot had contacted both his destination and alternate airfields and established all the

relevant information he required. As the weather at his destination deteriorated, he made the prudent decision to divert to his alternate airfield. The Runway 19 length of 500 m was on long, wet grass with an ill-defined uphill slope. Moreover, the variable direction of the wind at Chirk meant that he may have landed without any significant headwind component.

The landing distance required for the aircraft weight and ambient conditions was 340 m based on a normal landing profile from a height of 50 ft. The CAA Safety Sense leaflet number 7C entitled '*Aeroplane Performance*' advises that landing on long, wet, grass (up to 20 cm long) on firm soil may require a 35% increase in the landing distance required on tarmac or concrete. Very short, wet, grass on firm soil may require up to a 60% increase in landing distance required. From these additional factors, depending on the length of the grass, the actual landing distance required could have been between 459 m (340 x 1.35) and 544 m (340 x 1.6).

Conclusions

Whilst the pilot had attempted to ensure that he was fully apprised of all the relevant information for his destination and alternate airfields, the runway length for the runway surface conditions was marginal and he was unable to stop the aircraft before the end of the runway.