ACCIDENT

Aircraft Type and Registration:	Piper PA-28-140 Cherokee, G-BOSR
No & Type of Engines:	1 Lycoming O-320-E2A piston engine
Year of Manufacture:	1966
Date & Time (UTC):	1 July 2008 at 1235 hrs
Location:	Old Sarum Airfield, Wiltshire
Type of Flight:	Training
Persons on Board:	Crew - 1 Passengers - None
Injuries:	Crew - None Passengers - N/A
Nature of Damage:	Aircraft damaged beyond economic repair
Commander's Licence:	Student pilot
Commander's Age:	31 years
Commander's Flying Experience:	50 hours (of which 37 were on type) Last 90 days - 22 hours Last 28 days - 22 hours
Information Source:	Aircraft Accident Report Form submitted by the pilot and subsequent telephone enquiries

Synopsis

The accident occurred whilst the solo student pilot was attempting to take off with a significant crosswind. He lost directional control of the aircraft, causing it to depart the runway and strike a fence.

History of the flight

The accident occurred at Old Sarum Airfield which has a single grass runway, oriented 06/24. Runway 24 was in use at the time.

On the morning of the accident the student flew 17 circuits, 13 of which were solo. He had completed his first solo flight the day before. Following a lunch break he flew two further circuits with the instructor, who then authorised him for a further hour of solo circuit flying.

The solo student commenced the takeoff roll and as the aircraft accelerated along the runway, it veered to the left. He reportedly applied right rudder, but the aircraft did not respond. He retarded the throttle and attempted to stop, but was unable to prevent the aircraft from departing the left side of the runway and colliding with a hedge and fence situated around 50 metres from the left edge of Runway 24. There was no fire. The ATC operator sounded the crash alarm and the airfield emergency services attended the scene.

ATC records reportedly showed that the surface wind had been close to 90° to the runway for most of the day. At the time of G-BOSR's takeoff for the dual flight in the afternoon, the indicated windspeed was 15 kt, occasionally gusting to 25 kt. When the student pilot commenced his solo takeoff, the gusts had apparently died away. The surface wind registered at the time was 160° at 15 kt and this was passed to the pilot. The Flight Manual for the aircraft type states that:

> *'The maximum crosswind component in which the aeroplane has been demonstrated to be safe for take-off and landing is 17 knots at a tower height of 33 feet.'*

Based on the indicated wind, the crosswind component would have been only around 2 kt below the demonstrated maximum value.

The ATC operator reported that when he returned to the control tower around 20 minutes after attending the accident, the maximum windspeed indicator registered 32 kt. The time at which this gust had occurred was not recorded.

The aircraft suffered impact damage to both wing leading edges, the propeller and the engine cowling and was beyond economic repair. Wheel tracks from the aircraft found by the airfield authorities reportedly curved smoothly away from the runway heading. An eyewitness reported that the veer to the left started before the aircraft reached the midpoint of the runway, at an estimated ground speed of 45-50 kt, and that none of its wheels left the ground. He considered that the aircraft appeared somewhat nose-low during the ground run. With this type of aircraft, excessive load on the nosewheel due to insufficient back pressure on the control yoke can cause a reduction in directional controllability.

Difficulties were experienced in obtaining full information on the circumstances of the accident from either the student or the instructor, but it appeared that the crosswind and pilot's lack of experience in such wind conditions were significant contributory factors to the accident. The reasons for the student having been authorised to fly solo in such conditions could not be established.