

British Gliding Association Accident Report Ref: 2019032

Overview by R H Dixon.

Accident on: 2 February 2019 at 13.00 hrs.

Aircraft Type: HPH Shark 304MS Registration: G-OHPH

Pilot: Andrew David Wood. Age: 59.

Total Hours: 880. P1: 743. Instructing: 292.

Badges Held: Silver and two diamonds.

Please also refer to BGA Accident Report Ref: 2019032 prepared by Geoff Stilgoe, Club Safety Officer, Southdown Gliding Club.

Purpose of the Flight.

The pilot self-launched from Parham airfield with the intention of soaring the ridge of the South Downs from Parham, West to South Harting then back to the East past Parham to Lewes, and back to Parham. He was flying in a conservative style and not consciously taking risks.

The weather conditions.

The weather was bright, with 1/8th low level cumulus generated by weak thermal activity. The wind was fresh, about 18 to 20 knots from approx. 330 to 340 degrees. The strength of gusts is not recorded.

Progress of the Flight.

The GPS trace of the flight is attached. The pilot had flown to his first turning point at South Harting, returned past Parham, continued East to Lewes, and was returning back westward towards Parham. He had not encountered any particular difficulties. At Truleigh Hill he estimated that he had enough height to make a safe crossing over the River Adur and Steyning and on to the East facing bowls at Chanctonbury, a distance of some 4 miles. He set out to cross the gap from about 1300 ft. QFE Parham. On arrival at the bowls to the East of Chanctonbury the pilot decided to "contour" round the bowl to the immediate East of Chanctonbury Ring spur. This is the northernmost spur in a series of three spurs and bowls facing North East in a line approximately from Washington to Steyning. The top of the ridge here is about 750 ft. asl. The GPS plot indicates that the glider was about 50 ft. above the height of the ridge.

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In flying round the bowl the glider moved away from the North West facing spur to the East of the bowl, which would have been generating hill lift, and started to fly along the wooded North East facing slope as indicated on the trace shown on the Google Earth illustration attached. In doing so the glider flew into a zone where, in the prevailing conditions, severe curl over might be anticipated. This is because, in this location, the hillside was up-wind of the glider, and the wind was coming across the hill to his left. Analysis of the GPS data indicates that the wind was about 20 knots from 331 degrees at this time, so with a significant westerly component. The attached photograph, taken from a following glider shows how near the glider was to the ridge when the upset occurred.

Air mass on the day.

The wind was fresh, averaging 18 knots, from approx. 330 to 340 degrees. The air mass was mildly unstable and this would tend to increase the intensity of curl over generated, possibly influenced by thermal sink.

I interviewed the pilot and discussed his level of awareness of the characteristics of the distribution of lift and sink in the Chanctonbury bowls and on other parts of the ridge run with similar orientation. In my view the pilot was not sufficiently aware of the potential for curl over in these areas in a North Westerly wind direction.

Conclusion.

The glider was flown at moderate speed into a localised, but severe area of curl over to the South East of Chanctonbury Ring spur, and near to the hillside. This resulted in a catastrophic loss of airspeed and an instant stall with severe nose-drop.

The Pilot's reaction was understandable. He states that, in his perception, there was no point in pushing the stick forward, as there was insufficient height available above the trees to achieve a recovery of airspeed. He applied full up-elevator immediately before the glider impacted the tree canopy. This may have resulted in a flattening out of the glider's attitude as it impacted the trees and quite possibly saved him from severe injury or worse. In areas of severe curl over it can happen that lowering the nose of the glider will not result in regaining airspeed because at this stage the local airflow can be from behind or above the glider.

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Background.

Southdown Gliding Club has a long tradition of ridge-running along the scarp slope of the South Downs. The Club has a trophy, the Harry-Harting Bowl, which is awarded each year to the pilot recording the fastest flight starting on the ridge adjacent to the airfield and turning South Harting Church to the West and Offham Church, near Lewes, to the East. This has, unsurprisingly, encouraged a competitive element amongst, in particular, the experienced ridge-running pilots, to maximise speed along the ridge. I should make it clear that there is no suggestion that, on this occasion, the pilot was attempting a high-speed run. Indeed, it is the case that a heavily ballasted high performance glider flown at speed might well transit such a curl over zone with sufficient momentum to get past without mishap.

It will be appreciated that the nature of the South Downs ridge is such that a degree of knowledge and an element of caution are desirable in order to safely traverse the ridge in various combinations of wind speed and direction and air mass instability. For example, as was the case on the day in question, an appreciable westerly component in the wind will result in areas of curl over in the lee of spurs and slopes which are facing the wind direction. Reference to the attached Google Earth graphic will show that, in the conditions on the day, the site of the accident was directly down-wind of the main spur of Chanctonbury Ring.

There is an illustrated manual, "Soaring the South Downs Ridge", available from the Club for a modest sum. It describes in detail the ridge itself, and its various features and characteristics in wind directions from North West, through North to North East. Reference to this publication, which is available to aspiring ridge-runners, will help to put the distribution of lift and sink mentioned in this report into context.

Dick Dixon

7 March 2019.