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BHPA Incident Report: GBR-2017-5483

INCIDENT

Aircraft Type:	Paraglider: Mac Para Elan size 28 serial number 3128-4225; harness: Mac Para RD harness fitted with a >10cm foam impact pad and Mac Para Aegis 33 emergency parachute; Flymaster GPS SD electronic flight instrument; Trespass helmet (EN 1077-B).
Certification:	Paraglider certification EN-C.
Location:	Stanage Edge, Derbyshire.
Date and Time:	12th December 2017, 13:15 UTC.
Type of Flight:	Local / ridge soaring flight.
Persons Involved:	Pilot A
Injuries:	Cause of death listed as chest injuries.
Nature of Damage:	Minor damage to the glider.
Pilot's Rating/Licence:	BHPA Paragliding Pilot (Hill) rating.
Pilot's Age:	59
Pilot's Experience:	No logbook available.
Information Source:	Track log information from Pilot A's electronic flight instrument; Pilot A's equipment inspection; witness statements from Pilots B, C, D and E; and Witnesses F, G and H.

1.0 Synopsis.

Pilot A was making a ridge soaring flight in the company of several other club flyers on Stanage Edge in the Peak District. Just above ridge top height, Pilot A's wing was seen to undergo a collapse and enter a spiral dive, before Pilot A impacted the hillside. He was attended to by witnesses and the emergency services, but died from his injuries.

2.0 History of the flight.

Pilot A was making his second flight of the day on Stanage Edge, having previously launched at 10:40am and flown for about an hour. Pilot A took off on the incident flight from the launch point known as Hook's Carr around 12:55pm. At this time there were ten or more pilots either flying or preparing to fly. Pilot A flew along the rock edge in a northwesterly direction for about 2km, before turning and flying back towards the take-off area.

At or around 13:10, witnesses reported seeing Pilot A's paraglider at or around 100ft above take-off, collapsing and then entering a steep spiral to the left. Pilot A was seen to impact the ground below the rock edge and was immediately attended to by pilots and passers-by. The emergency services and air ambulance attended, and Pilot A was pronounced dead at the scene.

3.0 Focus.

Based on the information available, the Investigation considered the flying area and local flying conditions; Pilot A's experience and currency; his equipment; and the part of Pilot A's flight immediately prior to his impact with the ground.

3.1 The flying area and local conditions.

Stanage Edge is a southwesterly facing ridge, popular with walkers, climbers, paraglider and hang glider pilots. Its main feature is a continuous vertical rock edge which runs on an approximate northwest–southeast axis for 4 km, the edge top being between 1300ft and 1500ft above sea level. The rock edge rises out of a sloping moorland hillside with many large boulders, some hidden by bracken.

The resident BHPA club (the Derbyshire Soaring Club) describes Stanage Edge in its online site guide as a "demanding site" that "should not be flown by inexperienced pilots". Further, it advises only flying Stanage in a southwesterly wind - if it "veers to the west or backs to the south… conditions on the ridge can get extremely nasty, with sudden vicious turbulence".[1]

The conditions stated on the Met Office Aftercast for the incident day were as follows:

> At 1200 UTC a weak, transient ridge of high pressure covered the UK with a frontal system approaching from the West. Visibility and weather, generally 30 KM visibility with NIL weather…. at 1200 UTC the 1000FT winds are 240 degrees 20 KT.

Reports by pilots on the site were generally consistent with the Aftercast, the local conditions during the morning described by pilots as smooth and laminar. The wind was blowing directly onto the hill from a southwesterly direction and was of sufficient strength to allow pilots to ridge soar the length of the edge. However, pilots reported that over the course of the late morning, the wind had become more westerly and some pilots noted the presence of lenticular wave clouds upwind of Stanage Edge.

In the few minutes prior to the incident, pilots reported that the wind had quickly increased in strength and had become gusty. Pilots who were airborne attempted to land, and those getting ready to fly elected not to take off. The airborne pilots stated they experienced sudden strong lift and turbulent air, particularly around the take-off area. Witness F (an experienced sailplane pilot) noted that soon after the incident, at the top of the edge near the paraglider take-off area, the wind direction was 45 degrees off the slope to the northwest. The Investigation considered that the evident rapid onset of turbulence supported the opinion put forward by several pilots that wave conditions were becoming prevalent.

3.1 Pilot A's experience and currency.

Pilot A was a BHPA 'Pilot' rated paraglider pilot who learned to fly paragliders in 2011 and acquired his Pilot rating in 2014. No logbook was available to the Investigation, but it is apparent that Pilot A was a regular club flyer. His electronic flight instrument recorded over 15 hours' flight time in the preceding six months, and that he last flew nine days before the incident day. It is apparent that he had flown on Stanage Edge before.

[1] https://derbyshiresoaringclub.org.uk/site-guide/stanage/

The Investigation determined that Pilot A had appropriate experience to fly on Stanage Edge, and was suitably current.

3.2 Pilot A's equipment.

Pilot A's total weight in flight was calculated to be within the EN certified range for the Mac Para Elan size 28 (90 to 112kg).

The Elan is an EN-C class paraglider described by the manufacturer as being suitable for the "experienced pilot". The EN standard defines Class C wings as having dynamic reactions to turbulence and pilot errors. They are designed for pilots who fly actively and regularly and are familiar with recovery techniques. It was not possible to determine whether Pilot A had undertaken any SIV (recovery from departures from normal flight) training.

The wing was examined by a paraglider service centre which undertook a general condition inspection, and measured Pilot A's wing against the manufacturer's line length specification. The wing was reported to be generally in good condition, apart from minor damage that may have occurred in the impact or subsequent recovery of the equipment from the hillside.

The suspension lines were found to be within manufacturer's specification. The service centre reported that the control lines were shorter than specification by 45mm on the left-hand side and 50mm on the right-hand side. The Investigation considers the extent of shortening in this instance not to be a contributory factor in the incident.

A static deployment test of Pilot A's emergency parachute inner bag from its outer container was made post-incident. The Investigation determined that within the limits of this static deployment test, Pilot A's emergency parachute deployment system functioned correctly.

3.4 The incident.

The Investigation considered the portion of the flight immediately prior to the impact.

Pilot A was flying in conditions that had changed since his first flight. It was stated by the other pilots that the wind direction had veered from its original southwesterly direction. This is supported by data from Pilot A's electronic flight instrument, showing a faster track over the ground when flying in a southeasterly direction, the veering westerly wind giving that leg a tailwind component.

Although witness statements differ in the reports of the height Pilot A was at when he experienced the departure from normal flight, it is apparent that he was within 100ft of the top of the edge, and 20 to 30m out in front (upwind) of the edge. The reported impact position was on a shallow section of slope, on an area of the hillside with no significant vertical rock face. Data from the electronic flight instrument shows that Pilot A was approximately 130ft above ground level when he experienced the collapse of his paraglider. He was unable to take effective action to recover from the ensuing spiral dive, or to throw his emergency parachute, before impacting the ground.

4.0 Findings

The Investigation determined from the available evidence that Pilot A encountered turbulent air in rapidly changing conditions, which led to a collapse of his paraglider from which he was unable to recover before impacting the ground and sustaining fatal injuries.

5.0 Recommendations.

The BHPA shall remind all pilots through Skywings magazine to remain constantly alert to the possibility of changes in wind and weather whilst ridge soaring.