
BHPA Incident Report: GBR-2020-14020

INCIDENT

Aircraft Type:	Paraglider: Ozone Zeno ML (serial number ZENML-R-47B-013); Swing Connect Race pod harness fitted with Gin Yeti 40 emergency parachute; Flymaster GPS SD electronic flight instrument.
Certification:	EN 926-2 Class D for a total weight in flight range of 95-110kg.
Location:	Playing field on the edge of Eastington, Gloucestershire.
Date and Time:	2 nd June 2020, 12:15 UTC.
Type of Flight:	Thermic / cross country flight.
Persons Involved:	Pilot A.
Injuries:	Listed as death due to the effects of electrocution.
Nature of Damage:	Major damage to the suspension lines of the glider as the right-hand side lines were severed. Damage to the harness from the incident and subsequent rescue.
Pilot's Rating/Licence:	BHPA Paragliding "Pilot" rating for Hill and Tow Environments.
Pilot's Age:	41
Pilot's Experience:	No logbook available.
Information Sources:	Statements from Pilots B and C, notes from an interview with Witness D, statements from Witnesses E, F and G. Data from Pilot A's electronic flight instrument, "Aftercast" information from the Met Office. Wing inspection report from an independent expert. Drone footage provided by the Police from the incident day. Information provided by the power distribution company's legal representative.

1.0 Synopsis.

Pilot A was making a cross country paragliding flight from Selsley Common to a field at the rear of his home. As he crossed the trees at the northeastern boundary of his chosen landing field, the base of his harness was seen to strike high voltage electricity cables above the field boundary, causing sparks and a bang. Pilot A and his wing were seen to descend vertically towards the ground. Pilot A was attended to by witnesses and the emergency services were called, however Pilot A died from his injuries.

2.0 History of the flight.

Pilot A launched from Selsley Common in Gloucestershire at approximately 11:10 UTC. The conditions on the hill at the time were reported to be northerly or north-northwesterly winds of

between 4 and 15 kph, with building thermic activity. Pilot A ascended in thermic lift above Selsley Common to an altitude of approximately 3000ft above mean sea level (amsl) and departed in a west-northwesterly direction, crossing the villages of Middleyard, Kings Stanley and Leonard Stanley. At 12:00 UTC Pilot A crossed Eastington village at approximately 1500ft amsl on a south to north track over the village. He made a series of descending turns over fields to the north of Eastington and flew downwind over the field adjacent to his intended landing field.

Pilot A made a base leg turn towards Eastington and on this leg of the landing approach he made a tight 360° turn to the right. He exited this 360° turn and then turned right on an into-wind final approach towards his intended landing field.

Pilot A was seen by Witness D from their position at the north boundary of the field to be flying directly towards them. The base of Pilot A's harness was seen to skim the first power cable before contacting the other cables, causing sparks and a bang. Pilot A and his wing descended vertically into the bushes on the boundary of the field. The paraglider wing settled with its bottom surface against the foliage, partially suspended by its lines over the two unbroken power cables. Witnesses attended to perform first aid. One power cable was broken and lying on the ground, and there were areas of grass and undergrowth on fire. The emergency services 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 leading to his collision.

3.1 The flying area and local conditions.

Selsley Common is a hill flown predominantly by members of the Avon Hang Gliding and Paragliding Club. It is located two miles to the southwest of Stroud and is used for flying in northwesterly and north-northwesterly winds.

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

"Aviation conditions were generally good across the area of interest with just some small cumulus cloud with base 3500ft present in the vicinity, early in the period of interest. The strong June sunshine would have led to the lowest levels of the atmosphere being unstable. It is clear from comparing the temperatures in the METARs at Gloucester with the forecast temperatures at 1000ft, that a very rapid cooling with height (lapse rate) existed between the ground and at least this height, with the lapse rate up to 2000ft and probably higher also fairly strong. The strong lapse rate indicates that strong thermal activity was likely present in the area of interest for much of the period, although this would have significantly reduced late in the afternoon, before diminishing completely in the evening."

Pilots B and C were flying at Selsley on the incident day. Pilot B reported light conditions when Pilot A launched, the conditions progressing to give strong thermal activity and turbulence close to the ground. Pilot C noted that the wind strength "once up high seemed to be a steady 12 to 14kph switching between westerly and north westerly." The local conditions reported by Pilots B and C support the information provided by the Met Office.

The Investigation determined that the conditions as reported on the day were suitable for flight for a pilot of Pilot A's level of experience.

The field where the incident took place is on the northeastern edge of the village of Eastington, which lies approximately 6km to the west-northwest of Selsley. The field has a mown grass surface and is bounded by high bushes and trees on four of its five sides. The field's perimeter length around its five sides is approximately 400m. There are houses to the northern, southern and

western sides.

On the field's northeast side is a line of bushes and trees, with a large open field beyond. The length of this side of the field is approximately 90m. Power cables run up this northeastern side, with a single wooden pole within the field. Evidence provided by the power distribution company's legal representative states that the height above ground of the cables is approximately 8.8m. The cables that Pilot A collided with and the poles supporting these cables have not been repositioned for around ten years.

The Investigation considered that in any moderate breeze, turbulent air would likely be present in the lee of the buildings and trees around the field. Very light wind conditions would therefore be necessary to attempt a landing on a paraglider. The field's limited size and the presence of numerous high obstacles on all sides would make landing demanding. On a high-performance paraglider such as the Ozone Zeno flown by Pilot A, a precise line of approach would be necessary to minimise the risk of out-gliding the field. The Investigation determined that the choice of landing field was a significant factor in the incident.

3.2 Pilot A's experience and currency.

Pilot A obtained his BHPA Pilot rating in 1996 in the Hill Environment. His Tow Environment endorsement was obtained in 2003. He was known amongst the Avon Hang Gliding and Paragliding Club and the national flying community as a highly experienced pilot who regularly undertook cross country flights. He was active in the national cross-country league, holding third highest score position in 2019 and being in the top ten for the three preceding years. Pilot A's most recent flight entered into the League was a 117km cross country flight on 16th March 2020. Witness D reported that Pilot A was known as a careful flyer and that he undertook an SIV course¹ in 2015 or 2016.

Pilot A's electronic flight instyument log recorded over ten hours' airtime since the beginning of 2020, including 6.5 hours of flight time following the authorisation to resume flying after the COVID 19 lockdown release (in England) on 14th May.

The Investigation determined from the available evidence that Pilot A was both suitably experienced and suitably current to make the flight attempted on the incident day.

Witness D stated that Pilot A had previously mentioned the presence of the power cables in the field in which the incident took place, and the need for "perfect conditions" in order to land there. Witness D reported that Pilot A had landed in this field three or four times before, the last time being approximately one year before the incident occurred.

3.3 Pilot A's equipment.

The paraglider was inspected by an independent expert who produced a report. The main lines on the right-hand side of the wing were reported as being cut by the emergency services. There was a significant amount of wear on the left-hand side main lines, and the report determined that this damage was likely to be as a result of the incident. The report indicated that from the lines that were intact and capable of being measured, the wing conformed to the manufacturer's specification.

The harness was substantially damaged in the incident or during the subsequent rescue. Burn marks were visible on the left-hand side of the harness. Other areas were torn or split. Some load-bearing straps were cut, evidently from the rescue.

The Investigation determined from the evidence available that the flying equipment was of suitable type and airworthy prior to the incident. The equipment was considered not to be a contributing factor in the incident.

¹ A course where pilots learn to deal with unstable flight situations under the supervision of instructors.

3.4 The incident.

The Investigation considered the portion of the flight in the ten minutes leading up to the contact with the power cables. The flight data was provided by an analysis of the GPS tracklog from Pilot A's electronic flight instrument. The GPS track for this portion of the flight is displayed in Fig. 1 (below).

At approximately 12:00 UTC Pilot A contacted Witness D from the air by mobile 'phone to say that he would be landing near his home. He asked for a lift to retrieve his car from Selsley hill. The GPS track indicates that at the time this call was made he was about to fly over Eastington, crossing from the south of the village. After crossing Eastington, Pilot A turned northwest, heading into wind. His altitude at this point was approximately 1000ft above mean sea level and he remained generally on a descending glidepath for the remainder of the flight, losing height with a series of turns over fields to the north of Eastington.

Approximately two minutes before Pilot A crossed the boundary of his intended landing field (the incident field), he turned to fly downwind, his flightpath crossing some large fields. These fields contained high voltage power cables on pylons or wooden poles, however there were large open areas affording potential alternate landing options. Police drone footage from the incident day shows that the two fields that Pilot A flew over before reaching the incident field contained low crops.

During his approach, Pilot A evidently estimated that his height above ground was such that he would arrive over the landing field with excess height. He elected to lose height by making a right-hand 360° turn, before making a right-hand into-wind turn onto final approach. It is apparent that Witness F saw him at this point - they reported that Pilot A appeared to be flying towards the incident field. They also stated that the paraglider was low and close to the trees but appeared to be in a controlled turn.

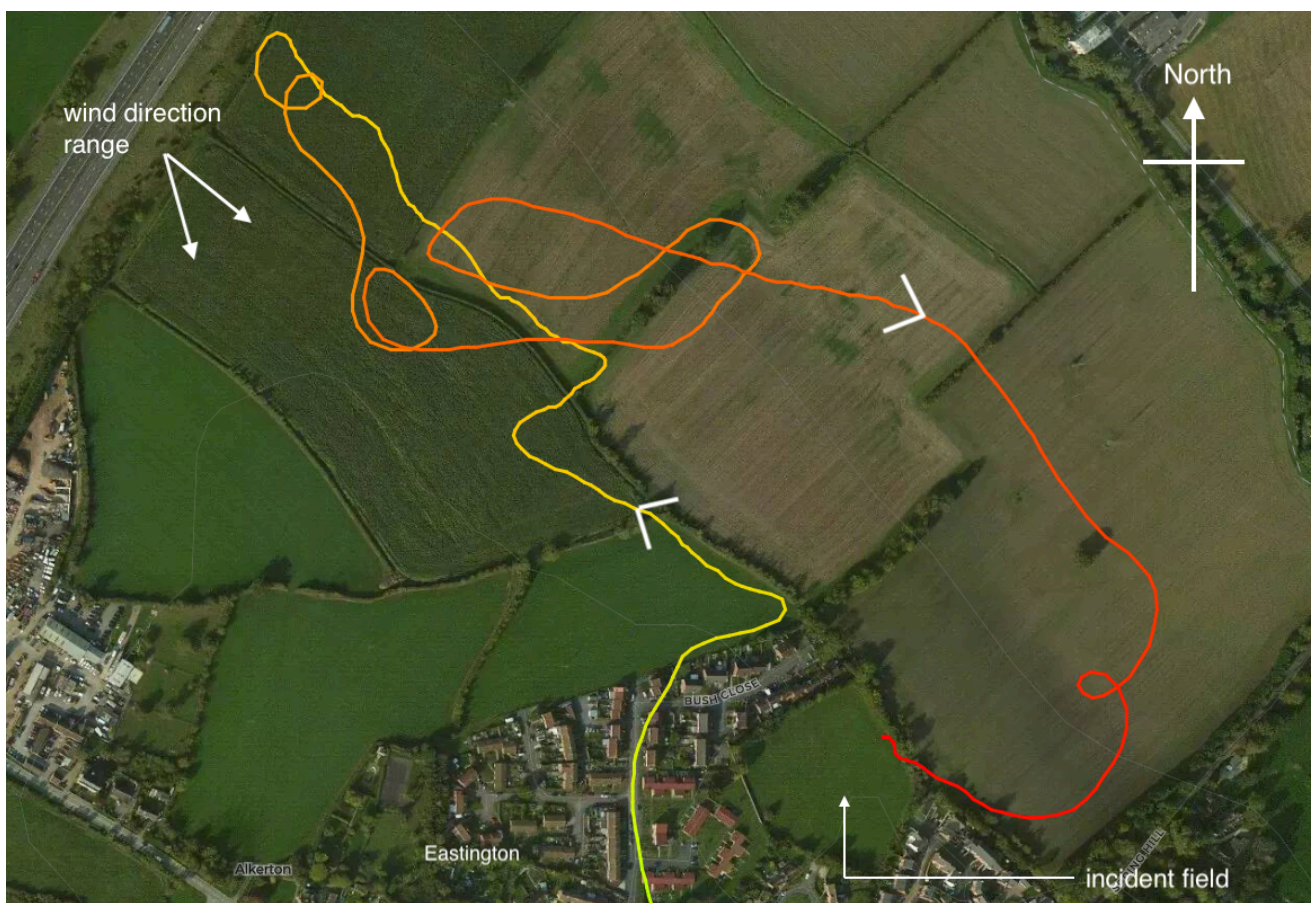


Fig. 1 (above). Overlay of GPS track. Direction arrows added to indicate flight direction.

From their position near the north boundary of the field (identified on Fig. 2), Witness D observed Pilot A flying directly towards them. It is evident that at this stage Pilot A was gliding into wind on

final approach. Witness D stated that he appeared to be well above the power cables and was “floating in nice and slowly”.

Pilot A’s GPS track illustrates that his course and height above ground required him to make a slight course deviation to his line of approach to pass to the left-hand side of a tree quite substantially higher than the surrounding foliage on the field’s boundary hedge (identified on Figs. 2 and 3). This line of flight brought him into contact with the power cables at approximately 8 to 9 metres above ground level.

Witness D reported no evident panic and no sudden movement on the controls. They noted that they saw Pilot A bring both controls down to somewhere between ear and shoulder level the instant before he contacted the power cables. His legs were still enclosed in his harness pod, and not lowered from the pod in the landing position. Witness D saw the bottom of Pilot A’s harness make contact with the power cables, causing sparks and a bang. The flight ended as the wing’s airspeed was reduced by this collision, causing the wing to descend vertically in a stalled state, before settling above Pilot A. Pilot A dropped to the ground and Witness D reported this to be “gentle” - no forceful impact with the ground was reported.

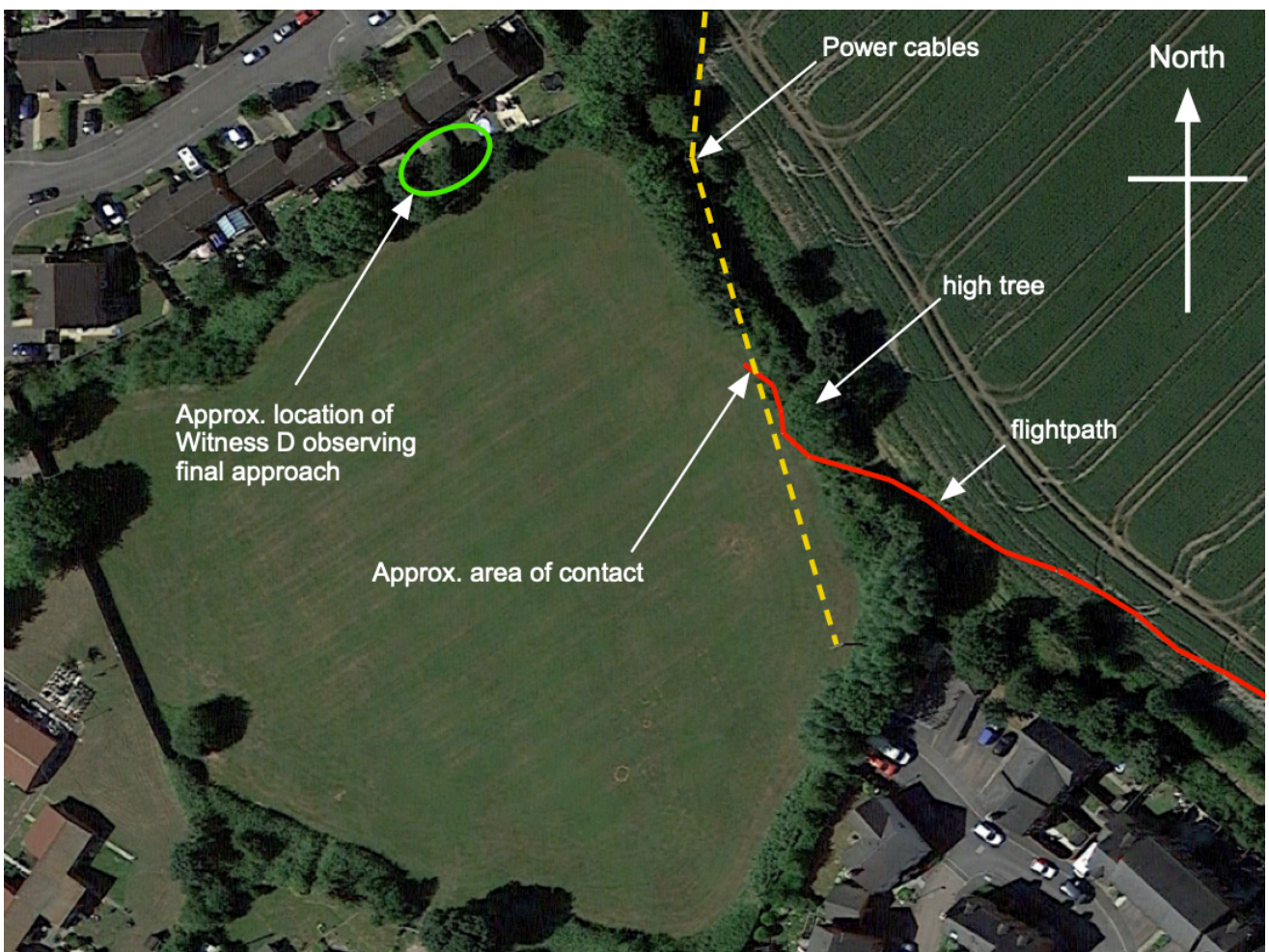


Fig. 2 (above). The incident field, final glide flightpath and power cables location.

Pilot A’s electronic flight instrument indicated a light wind, varying between northwesterly and northerly in the final moments of the flight. There was no evidence of strong lifting, sinking, or turbulent air on his landing circuit approach. There was no departure from normal flight or loss of control apparent from the GPS track; or reported by the witnesses.

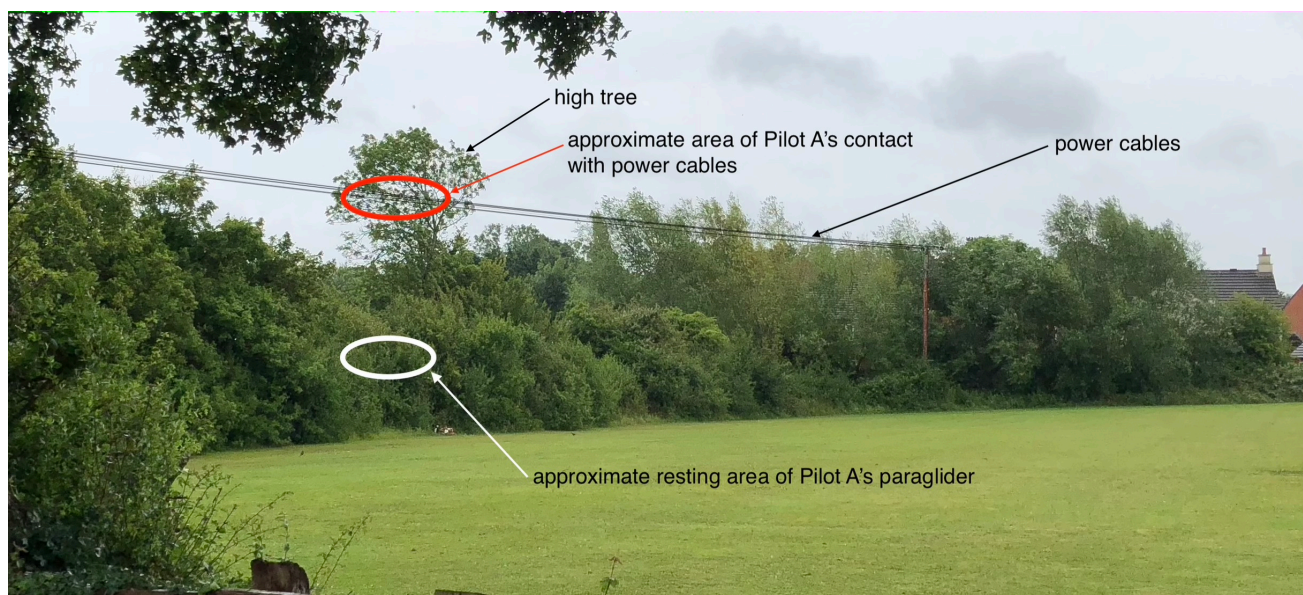


Fig. 3 (above). View of the field's northeasterly boundary from Witness D's approximate position when observing the incident. The power cables have been digitally enhanced for clarity against the background.

It is evident that Pilot A selected his flight path so as not to fly low over the buildings close to his chosen landing field. He decided to burn off height outside the landing field so that he did not arrive over the field with excessive height, and risk overshooting the landing field on final approach. However, this selected flight path put Pilot A at risk of collision with obstacles on the field's northeasterly boundary.

As Pilot A's height above the ground diminished on his final approach glide, his course deviation to pass on the landing field side of the high tree committed him to a trajectory where collision with the power cables would be highly probable, unless emergency avoiding action was taken. There was no sudden control input reported by witnesses and nothing evident on the GPS track that indicated that Pilot A had become aware of his imminent collision with the power cables and had attempted to make an emergency turn in order to avoid the collision.

The Investigation considered whether Pilot A had been able to see the power cables before the collision. The reported meteorological conditions would have provided general good in-flight visibility, and the direction of Pilot A's final approach would not have been directly into the sun. Whilst Pilot A had previous experience of landing in the field, and knowledge of the location of the power cables, it cannot be confirmed whether, or at what point, Pilot A detected them against the background terrain when gliding towards them.

4.0 Findings

The Investigation determined that the incident occurred because Pilot A struck power cables whilst on final approach to land. There was insufficient vertical separation between his glidepath and the power cables, and Pilot A did not take effective avoiding action to prevent the collision from which he sustained fatal injuries. The Investigation found the choice of landing field to be a significant contributory factor in the incident.

5.0 Recommendations.

The BHPA shall remind all pilots through Skywings magazine to remain alert to the danger of power cables and the importance of taking action to avoid contact.