

BOARD OF INQUIRY REPORT

**Investigation of a paragliding accident
which occurred at Milk Hill in Wiltshire,
on 27th August 2005
in which the pilot
was fatally injured.**

Introduction

On Sunday 27th August 2005 the British Hang Gliding and Paragliding Association (BHPA) received reports of an air accident at Milk Hill in Wiltshire that had resulted in the death of a paraglider pilot. The BHPA is required by the Air Accident Investigation Branch of the Department for Transport to carry out an investigation and produce a report under its delegated authority. The BHPA convened a Board of Inquiry under President David Thompson and member Brad Nicholas, with authority to investigate the accident and submit a report to the Flying and Safety Committee (FSC) of the BHPA for ratification.

BHPA investigation serial number: IR 05/093

Summary

On Sunday 27th August 2005 at approximately 1.30pm a BHPA 'Pilot' rated paraglider pilot arrived at the site Milk Hill in Wiltshire with the intention of flying his Advance Epsilon 3 paraglider. At approximately 2.40pm the glider suffered a collapse at low level that resulted in the pilot impacting the hillside. On the morning of 14th September 2005 the pilot died from injuries sustained in the accident. Following an investigation the Board found that the incident was caused by the collapse of the paraglider at low level from which the pilot was unable to recover in the time available, brought about either by turbulence due to local meteorological conditions, or by a misjudgement by the pilot, possibly while attempting a 360-degree turn.

This Document is confidential until ratified.

Date ratified by the BHPA Flying and Safety Committee: 20th April 2006

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APPENDICES

Appendix A, photograph of helmet damage.
Appendix B, Site photograph and diagram.

THE STRUCTURE OF THE REPORT

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The structure of this report conforms to that recommended in the BHPA Technical Manual and is intended to follow the principles pertaining to AAIB reports. It is divided into four sections plus the Appendices:

Section 1 - Factual information

Section 2 - Analysis

Section 3 - Conclusions

Section 4 - Safety Recommendations

Date: _____

Signed



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SECTION 1 - FACTUAL INFORMATION

1.1 History of the flight

On the morning of Sunday 27th August at approximately 10am a number of pilots began arriving at Milk Hill in Wiltshire with the intention of flying their paragliders. By mid-day it is estimated that there were about 15 – 20 pilots with 8 – 10 in the air at any one time. Conditions were described by all the witnesses as being good for paragliding with a 10 – 14mph southwesterly breeze with light thermic activity though one witness describes them as being "...not so thermic that anyone was able to go cross-country".

At approximately 1.30 – 2pm 'Pilot A' arrived on site. He was greeted by 'Witness A' who states that "We chatted and caught up on things.... he asked me about the conditions and I informed him that it was fine, quite thermic, but not very rough." Witness A goes on to explain how, at approximately 2.30pm, he saw Pilot A take off using a reverse launch and then flew around with him and about 6 – 8 other pilots.

At approximately 2.40pm, having heard loud rustling noises, the attention of the witnesses was drawn to a paraglider pilot, apparently in difficulties. Though the exact description of events differs slightly, all witnesses agree that the pilot's glider was in an 'unusual, non-flying attitude' at approx 30m above the ground and falling rapidly. One witness stated that he saw the pilot flying 'towards the hill quite low' then goes on to describe how the wing entered a series of unstable manoeuvres immediately after this. Two of the witnesses stated that the pilot put in sharp, banking turns, first one way and then the other just prior to the canopy collapsing. The pilot was then seen to pendulum into the hillside with some force before being dragged by his glider approx 100m up the hillside, eventually coming to rest by the fence at the top of the slope. It is unclear what set off this sequence of events, as the initial stages were not witnessed.

hospital. On the morning of 14th September 2005 the pilot died from injuries sustained in the accident.

1.2 Injuries to persons

Injuries	Crew	Passengers	Others
Fatal	1		
Serious			
Minor / None	-	-	-

1.3 Damage to the aircraft

The glider was slightly damaged having come to rest on a barbwire fence.

1.4 Other damage

There was some damage to the harness as a result of it having been cut from the pilot by the emergency services. The helmet worn by the pilot was extensively damaged, indicative of a severe impact from the front (see Appendix A).

1.5 Personnel information

The pilot was a male aged 45 years and held a BHPA Pilot rating. He began training with the Joint Services Hang Gliding and Paragliding Centre in April 1997. On 18/4/97 he gained his Club Pilot rating and his Pilot rating six years later on 21/7/03.

The pilot kept a logbook containing details of flights from April 1997 to August 2003. There is no further record of flights after that date. The logbook shows that the pilot gained approximately 30 hours in the 6 years to August 2003.

1.6 Aircraft information

The paraglider was an Advance Epsilon 3 (size 30), serial no. 20717 and manufactured in 1999. This glider is certified by the DHV as a 1/2. 1/2 gliders are described by the DHV as "Paragliders with good-natured flying characteristics". The glider was sent to an independent test house for inspection and was found to be in good overall condition apart from a small hole on the top surface, caused most probably when the glider came to rest on the barbwire fence.

1.7 Meteorological information

The Met office aftercast describes an area of weak low pressure covering the Wiltshire area at the time of the incident producing a southwesterly breeze of about 12 knots (14 mph), with approx 40-50% cumulus cloud cover. Evidence from the paraglider pilots present suggests that the day was thermic (though not excessively) with a southwesterly to south southwesterly breeze of about 10 – 14 mph, occasionally gusting closer to 20 mph due to thermic activity. A number of the witnesses stated that the wind direction was more southerly at times as indicated by smoke stacks and smoke from fires in the area.

1.8 Aids to navigation

Not Applicable

1.9 Communications

Not Applicable

1.10 Aerodrome and approved facilities

Milk Hill is situated in Wiltshire and is controlled by the Thames Valley Hang Gliding Club (TVHGC). The TVHGC site guide describes the site as being suitable for 'all levels of pilot.' The site itself consists of a grassy ridge leading to a bowl of approx 100m in height (above bottom landing area). Best wind direction is west through southwest. Under 'Hazards' the guide goes on to say, "Consider the airflow caused by the spur (labelled Milk Hill on the map) in different wind and thermic conditions. As well as the hazard of rotor caused directly by the spur in a southerly, it is possible to get turbulence in thermic conditions when thermals leave the south slope of the spur and draw air in from both the north and south sides of the spur." (See Appendix B for site photo and diagram). One of the witnesses states that he experienced turbulence on several occasions in the area of the incident, which he suspects was due to airflow coming over the southern spur.

1.11 Flight recorders

Not Applicable

1.12 Wreckage and impact information

The incident occurred in the bowl area of the site close to the normal takeoff area. This area is sloping and grassy and would be generally regarded as ideal for paragliding.

1.13 Medical and pathological information

The pilot died as a result of brain damage sustained in the impact.

1.14 Fire

Not Applicable

1.15 Survival aspects

The helmet used by the pilot was a 'Charley Insider' full-face helmet certified (EN966) for airborne activities. The helmet suffered severe damage as a result of the impact (see Appendix A) consistent with having sustained a heavy impact on the chin-guard/frontal area of the helmet. There were also significant deposits of soil and grass lodged in the chin piece trim indicating a frontal impact.

1.16 Tests and research

Not Applicable

1.17 Organisational and management information

Not Applicable

1.18 Additional information

Not Applicable

1.19 Useful or effective investigation techniques

Not Applicable

SECTION 2 - ANALYSIS

2.1

Due to the nature of the injuries sustained by the pilot, the Board considered the effectiveness of the helmet. The Board concluded that the force of the impact was well in excess of the design and test criteria for the helmet and therefore find that the helmet was not a factor in this incident.

2.2

The Board considered the paraglider. The Advance Epsilon 3 paraglider was found to be in good and airworthy condition when independently tested. It was of a type and size that was suitable for the pilot. The Board does not consider the glider to be a factor in this incident.

2.3

The Board considered the level of experience of the pilot. Between 1997 and 2003 the pilot amassed approximately 30 hours flying. This averages about 5 hours per year and would be considered very low when compared to the UK average of approximately 25 hour per year. Analysis of the pilot's logbook shows that there were long periods of time where no flying occurred. There was only 1 day logged for 1999, 2 days for 2000 and flying for 2001 and 2002 was limited to the Joint Services expedition in the August of those years. There was a little more activity in 2003 with approximately 12 hours being amassed in July and August (including the Joint Services exped.).

There are no records of the pilot's paragliding activity between August 2003 and the date of the incident. However, there is some anecdotal evidence to suggest that the pilot was not particularly current because of the demands of his job and the fact that in September 2004 he began an MPhil at Cambridge University that lasted for 1 year.

In summary, due to the lack of any hard evidence, it is impossible for the Board to come to any definite conclusions as to the level of experience and currency of the pilot. However, he would appear to be relatively 'low airtime' for his time in the sport, with a level of experience and flying currency that was marred by significant activity gaps.

2.4

The Board considered the meteorological conditions and their possible effects. The meteorological conditions on the day were, on the whole, good for paragliding. The weak area of low pressure covering the area produced southwesterly winds in the region of 10 – 16mph gusting up to around 20mph as a result of thermic activity. That said there is also evidence to suggest that on occasion the wind would come from a more southerly direction than the ideal 'west through southwest' as stated in the site guide. This would mean that the wind was coming over the spur at the south of the site and could therefore give rise to turbulent airflow, especially in the bowl area. If this southerly flow also coincided with a period of increased wind strength and/or coincided with some thermic activity, then it could easily have produced enough turbulent airflow to cause a collapse in a paraglider. The Board believes that turbulence brought about by the local meteorological conditions may have been a factor in this incident.

2.5

The Board considered the evidence stating that the pilot was flying towards the hill at low level and that he made steep, banking turns prior to impacting the ground.

Given the conditions on the day and the fact that the pilot was seen flying towards the hill, it is logical to conclude that the pilot may have been attempting to execute a 360-degree turn in order to gain height in some rising air. As in 2.4, if this coincided with an increase in the wind strength, the pilot may have found himself with insufficient space (due to his proximity to the hillside and the fact that he would have been flying towards the hillside at a rate much quicker than expected) to complete the turn. In attempting to tighten the turn further, by initiating a tight banking turn, it is possible that the pilot stalled one side of the wing, thus setting off the chain of events. The Board believes that an error of judgement by the pilot, possibly while attempting to carry out a 360-degree turn in close proximity to the hillside may have been a factor in this incident.

2.6

The Board considered the collapse of the paraglider and the immediate after effects. Due to the fact that there were no witnesses to the initial stages of this sequence of events, and considering 2.4 and 2.5 it was difficult for the Board to be definite in its findings.

In any event it is clear that the pilot was unable to control the paraglider once the departure from normal flying configuration had occurred in the time available before impact with the hillside. Collapses are an accepted part of paragliding due to the fact they have no rigid structure and rely on air pressure to remain inflated. Correct procedure for recovering from a collapse is to first maintain a safe course, either by weight shift, brake or a combination of both, then to 'pump' out the side of the wing that has collapsed using the appropriate control/brake. This is a simple enough procedure though at low level requires instant response from the pilot as any delay can result in the glider losing height and possibly entering a rapid, spiral type turn towards the hillside. Any lack of currency may have resulted in the pilot losing the fine touch - which may have been a factor in losing control of the glider - and once control was lost, at a height of only 30 metres, there would only be split seconds in which a recovery could be made.

SECTION 3 - CONCLUSIONS

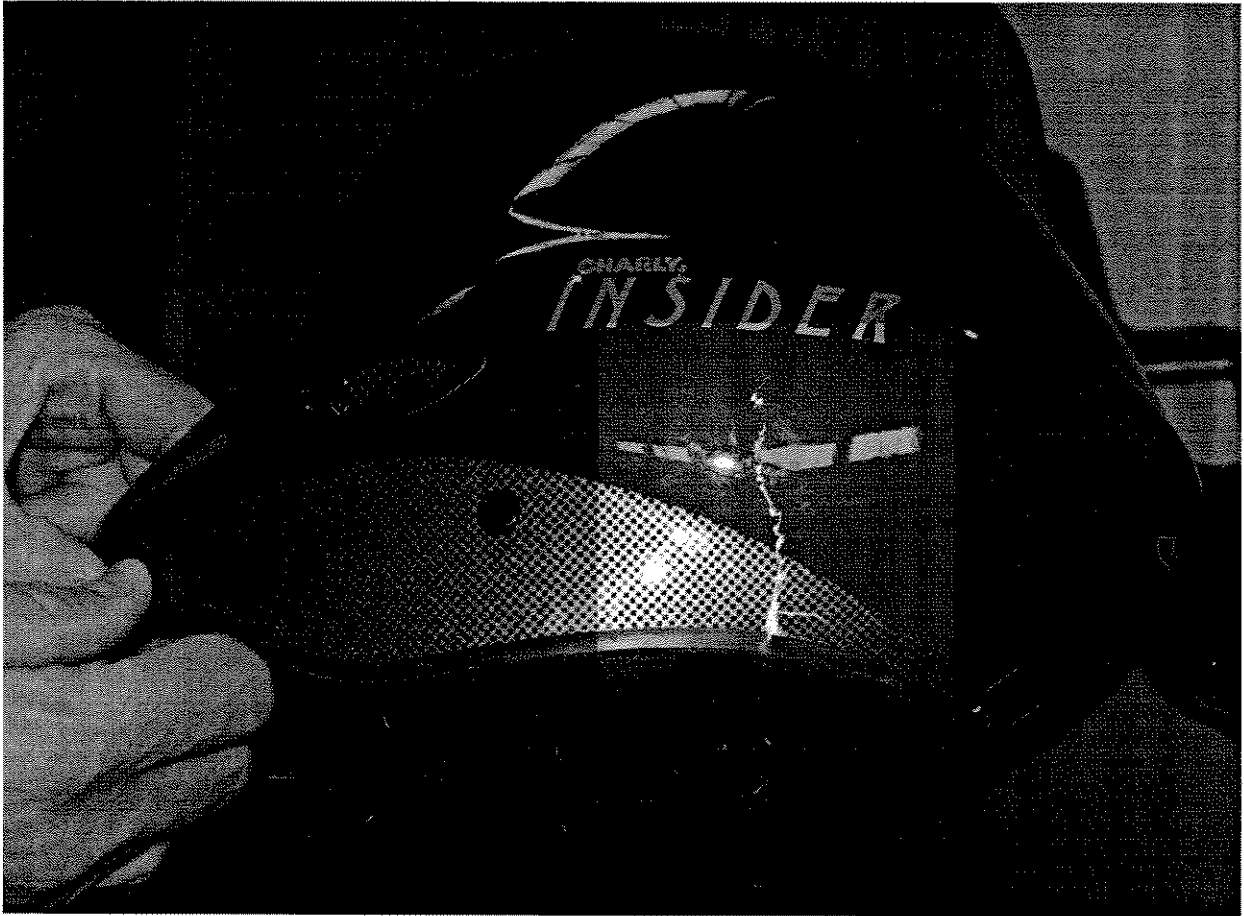
The Board found that the incident was caused by the collapse of the paraglider at low level from which the pilot was unable to recover in the time available, brought about either by turbulence due to local meteorological conditions, or by a misjudgement by the pilot, possibly while attempting a 360-degree turn.

SECTION 4 - SAFETY RECOMMENDATIONS

None

APPENDICES

Appendix A
Helmet photo



Appendix B
Site diagram and Site photo

