



PARAGLIDER ACCIDENT REPORT AND EXECUTIVE SUMMARY

				Reference:	SP003/2011	
Paraglider Registration	N/A	Date of Accident	16 December 2011		Time of Accident	0943Z
Type of Paraglider	Paraglider		Type of Operation		Private	
Pilot-in-command Licence Type		ParagliderSport	Age	33	Licence Valid	Yes
Pilot-in-command Flying Experience		Total Flying Hours	400,0		Hours on Type	150,0
Last point of departure		Farm Pampoenfontein (Western Cape)				
Next point of intended landing		Clanwilliam(Western Cape)				
Location of the accident site with reference to easily defined geographical points (GPS readings if possible)						
8 km NNW of Porterville (GPS position: South 32°56 .121 East 019°00.863)						
Meteorological Information		Surface wind: SW/0 to 5 knots, temperature; 28 °C, cloud cover: nil				
Number of people on board	1 + 0	No. of people injured	0	No. of people killed	1	
Synopsis						
On 16 December 2011 at 0937Z the pilot launched from the mountain on the farm Pampoenfontein north of Porterville on a flight which formed part of the Winelands Open Paragliding competition. It was immediately obvious that the pilot was not strapped into his harness correctly and had no control over the glider. For just over 5 minutes the pilot held on to the harness trying desperately to find a way to secure himself. At 0943Z his strength gave in and he plunged approximately 110m to the ground. The pilot was fatally injured during the accident.						
Probable Cause						
The pilot failed to secure the main support straps of his harness before launching.						
IARC Date				Release Date		

PARAGLIDER ACCIDENT REPORT

Name of Owner/Operator :Oleg Thomas
Manufacturer :Advance
Model :Sigma 7
Nationality :Moldovan
Place :8 km north of Porterville
Date : 16 December 2011
Time :0943Z

All times given in this report are Co-ordinated Universal Time (UTC) and will be denoted by (Z). South African Standard Time is UTC plus 2 hours.

Purpose of the Investigation:

In terms of Regulation 12.03.1 of the Civil Aviation Regulations (1997) this report was compiled in the interest of the promotion of aviation safety and the reduction of the risk of aviation accidents or incidents and not to establish legal liability.

Disclaimer:

This report is produced without prejudice to the rights of the CAA, which are reserved.

1. FACTUAL INFORMATION**1.1 History of flight**

- 1.1.1 On 16 December 2011 at 0937Z the pilot launched from the Pampoenfontein launch site north of Porterville. This flight was part of the Winelands Open Paragliding Competition which was held from 11-17 December 2011 in Porterville, Western Cape.
- 1.1.2 Immediately after launching it became clear to the meet director and other pilots on the launch that the pilot had not secured the main support straps on his harness as he could be seen hanging from the harness in an unnatural way. (Photographs attached in Appendix A)
- 1.1.3 After 5 minutes of hanging on to the harness the pilot's strength gave in and he fell from the harness. The fall was approximately 110 meters and the pilot died on impact.

1.2 Injuries to persons

Injuries	Pilot	Crew	Pass.	Other
Fatal	1	-	-	-
Serious	-	-	-	-
Minor	-	-	-	-
None	-	-	-	-

1.3 Damage to paraglider and equipment

1.3.1 There was no damage to the glider or harness. It was inspected and compared with the manufacturer's data.

1.4 Other damage

1.4.1 No other damage was caused.

1.5 Personnel information

Nationality	Moldovan	Gender	Male	Age	33
Licence type	Paraglider				
Licence valid	Yes	Type endorsed	N/A		
Ratings	N/A				
Medical expiry date	N/A				
Restrictions	None				
Previous accidents	None				

1.5 Flying experience:

Total hours	400,0
Total past 10 days	8,0
Total on type past10days	8,0
Total on type	150,0

- 1.5.1 The pilot's logbook could not be located, and the total hours and hours on type were estimation by the pilot's wife over a period of 6 years. The totals for the past 10 days are the accumulated time the pilot spent flying in and around Porterville in the days preceding the accident.
- 1.5.2 For this competition, the Organizers did the validation of the foreign competitor's licenses. The pilot had to apply to his local body to issue him with a FAI IPPI card. This is an internationally accepted card with the same period of validity as his license. All foreign competitors were required to take out temporary membership with the local body, SAHPA. The temporary membership could not be issued without a valid license and IPPI card.

1.6 Paraglider information

Type	Advance Sigma 7 - 31
Serial number	2475P43607
Manufacturer	Advance CH
Year of manufacture	2009
Total airframe hours (at time of accident)	150,0
Operating categories	Paraglider

1.7 Harness information

Type	Advance Impress 2
Serial number	116184-59312M
Manufacturer	Advance CH
Year of manufacture	2009
Total airframe hours (at time of accident)	150,0
Operating categories	Paraglider

1.8 Meteorological information

- 1.8.1 Weather information was obtained from the SA Weather site. Weather observations were also obtained from other paragliding pilots and the meet director present at the site

Wind direction	SW	Wind speed	0-5 kts	Visibility	10 km
Temperature	28 °C	Cloud cover	None	Cloud base	None
Dew point	Unknown				

1.9 Aids to navigation

1.9.1 The pilot had a Garmin GPS units mounted on the harness during the flight, as well as a GPS based tracking unit on his person.

1.10 Communications:

1.10.1 The pilot carried a shoulder-mounted 2m radio (5 watt) during the flight. Radio contact was one sided as the pilot could not operate the radio due to the fact that he was too busy hanging on.

1.10 Aerodrome information

1.10.1 The accident did not occur at or near an aerodrome.

1.11 Flight recorders

1.11.1 The paraglider was not fitted with a cockpit Voice Recorder (CVR) or a Flight Data Recorder (FDR) and neither were required by regulations to be fitted to this type of aircraft.

1.12 Wreckage and impact information

1.12.1 The pilot hit the ground at a substantial rate of descent. The paraglider continued to fly unmanned for a further 2 minutes before it gently came to rest in a field approximately 100m from where the pilot impacted in the middle of a gravel road.

1.13 Medical and pathological information

- 1.13.1 Post mortem results revealed that the pilot died of injuries associated with the crash.
- 1.13.2 The results of toxicology tests were not available at the time that this report was compiled. If any results are received later indicating that medical aspects may have affected the performance of the pilot, this will be considered as new evidence and the investigation will be re-opened.

1.14 Fire

- 1.14.1 There was no pre- or post-impact fire.

1.15 Survival aspects

- 1.15.1 The accident was considered not survivable due to high impact forces on the body of the pilot during the sequence of the accident.

1.16 Tests and research

- 1.16.1 Tests with the same type of harness in a simulated environment, and 6 volunteer pilots, gave the average pilot 3 to 3.5 minutes hanging in the same configuration before restricted blood flow to the arms caused the pilots to lose their grip on the harness. Four of the pilots was able to secure them self in the harness long enough to have survived an incident of this kind by using various techniques.

1.17 Organisational and management information

- 1.17.1 This was a private flight (competing in the Winelands Open Competition), with the pilot also being the owner of the paraglider.

1.18 Additional information

- 1.18.1 The Winelands Open Competition was a cross country flying competition with the main aim of completing a set course during the seven days of the competition. This

was also designated as a Pre World Cup indicating that competition was not part of the World Cup Series, but was to determine if it would be included as part of the next years series.

1.18.2 The helmet used by the pilot during the flight had appropriate EN. The helmet used by the pilot is one of the most common used helmets, a Charly Insider certified to the EN966 standard for paragliding helmets.

1.18.3 The pilot foot launched from a prepared take off site used daily for the sport of paragliding. The launch site is situated on the mountain 600m above the valley floor. Pilots attempt to find thermals after the launch to continue with their flight.

1.18.4 A three-dimensional image of the flight is attached (**See Appendix B**)

There are 2 tracks indicated, the one recorded by the Garmin GPS unit attached to the harness with a sampling rate of 2 seconds, and a second one recorded by the tracking device the pilot had on his person. There is a slight discrepancy in altitude between the two tracks as it used GPS altitude.

1.18.5 Harness definition

Two main types of harnesses are used in Paragliding. The first and most common type of harness are referred to as open harnesses with a more upright seating position and where the legs are exposed. The main support straps are visible to the pilot.



Figure 1Open Harness

The second type of harness is the cocoon harness that has an aerodynamic fairing that covers the pilot's legs and abdomen. The main support straps that run thru the legs are not visible with the fairing done up. The seating position is very supine. This is the type of harness used most often in competitions.



Figure 2 Cocoon Harness

Appendix C Illustrates how it is possible to forget to do up the main support straps on a cocoon harness.

1.18.6 The grading of the flying site for paraglider flights are done according to the complexity of the launching and the flying conditions. The grades used are Student sites, Basic and Sport sites. A Student site is suitable for student pilots, and all other paraglider pilot's. A Basic site is suitable for all paraglider pilots except student pilots. A Sport site is only suitable for sport rated pilots. Sport rated pilot's need to hold a sport rating which implies a higher level of proficiency and experience. The Pampoenfontein site was classified as a Basic site.

1.18.7 The reserve parachutes used on the paraglider are a fast opening type, but need about 100m of height to ensure 100% proper opening. Below 100m the chances of injury are high due to the pilot not having time to stabilize below the canopy. The reserve parachute is connected to the harness as well and therefore could not be used in this incident.

1.19 Useful or effective investigation techniques

1.19.1 None.

2. ANALYSIS

- 2.1 The pilot's licence and FAI IPPI card indicated he was suitably qualified and proficient to participate in the WinelandsOpen competition which was rated as a Basic site.
- 2.2 The pilot completed 2 flights as part of the competition in the days preceding the day of the accident. .
- 2.3 The paraglider, harness and all safety gear were inspected after the accident. No abnormalities or defects were found.
- 2.4 Photographic evidence indicate that the pilot did not do up the main support straps of the harness before launching. The main support straps were obscured by the aerodynamic fairing that was done up and further by an instrument panel that was also attached.
- 2.5 The pilot launched from the steeper section of the launch area with a sharp drop off that would have prevented him from aborting the launch even if he realised the main support straps were undone.
- 2.6 Once airborne the pilot locked his arms around the shoulder straps and risers, while attempting to get purchase with his legs. The pilot slipped further and further down the harness until he lost his hold and plunged to his death. Photographs in **Appendix A**

3. CONCLUSION

3.1 Findings

- 3.1.1 The pilot was the holder of the required paraglider license and suitably qualified to participate in this type of competition.
- 3.1.2 The paraglider, harness and the pilot's safety gear was found to be serviceable at the time of the accident.

3.1.3 Meteorological conditions did not play any part in this incident.

3.2 Probable cause/s

3.2.1 The pilot omitted to do up the main support straps on his harness.

3.2.2 Contributory cause/s

3.2.3 Contributing factors could have been competition induced stress, or even the pilot undoing the main support straps to move from one launch area to another although no conclusive evidence of this could be found.

4. SAFETY RECOMMENDATIONS

4.1 The National Safety Officer of SAHPA is investigating options to prevent future occurrences of the same incidents but no conclusive recommendations can be made at this time.

5. APPENDICES

5.1 Appendix A Photographs of the pilot while airborne and equipment

5.2 Appendix B 3 D Track Logs of the flight

5.2.1 Appendix C Explanation of main support strap problem on cocoon harness

Compiled by

South African Hang Gliding
And paragliding Association (SAHPA)

Date:

For: Director of Civil Aviation



This photograph was taken about 2 minutes after the pilot launched. It is clear that he is hanging low in the harness and the support straps is not done up. He has his arms locked around the shoulder straps and risers of the glider.



Reference photograph of another pilot in same harness in normal flying configuration.



Pilot has slipped down further in the harness.



Pilot milliseconds from loosing his grip and plunging to his death.



Glider& Harness (1) with body (2) behind bushes in the background



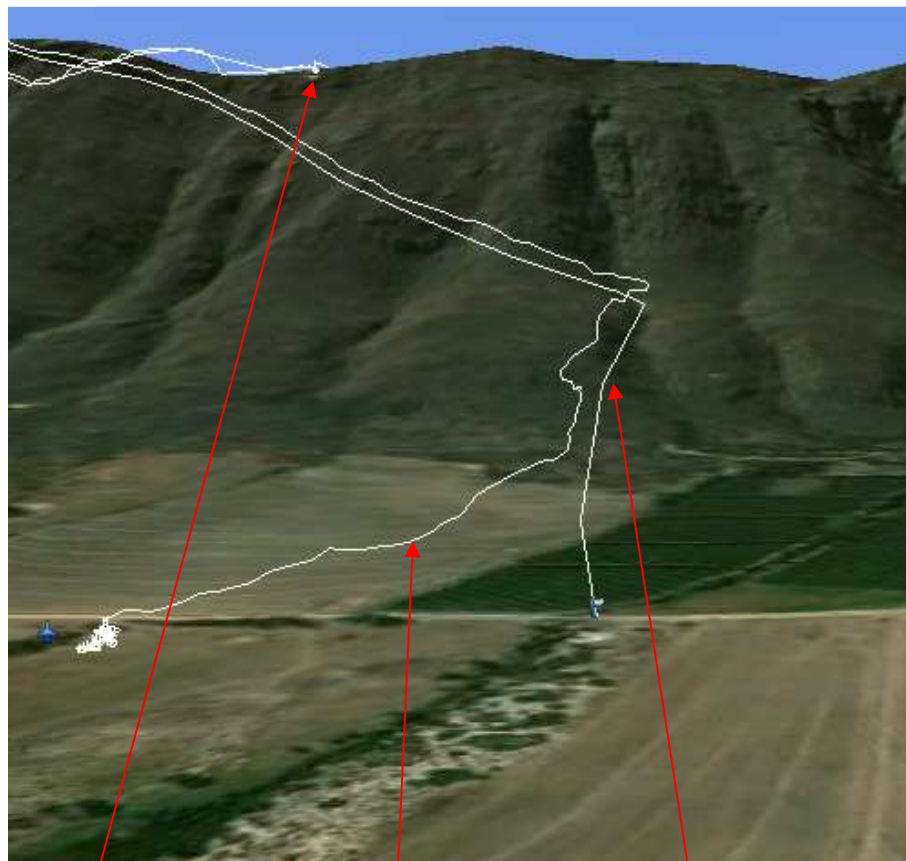
Harness showing Neoprene Skirt(1), leg straps(2), Skirt attachment (3) and Cockpit(4)



Close up view of the skirt (1) and cockpit(2) attachment indicating that they were done up.
The one leg strap attachment is also visible(3)



Leg strap buckles not done up



Launch Area

Glider Track

Pilot Track

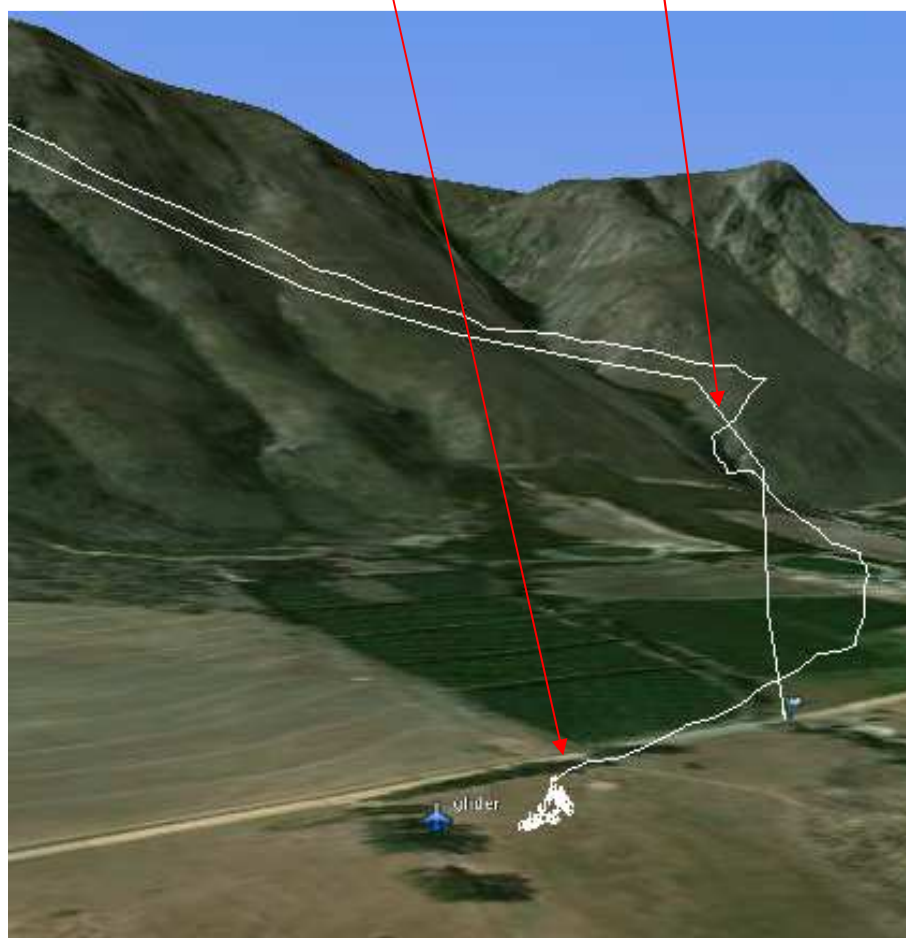


Illustration of restraining safety of cocoon-type paraglider harnesses

1. Race harness with speed bag

The Harness is an aerodynamically-optimised harness for competition pilots and performance oriented cross country pilots. It is in some features significantly different from common harnesses. Additional features, like speed bag and front cockpit with according latches, do create a relatively complex operation situation. The harness has a leg-breast strap combination with two latches on the breast strap. As soon as at least one of the breast straps is locked, there is a restraining safety against falling out given.

With common harnesses that incorporate the same restraining mechanism of the straps as the accident harness (a so called “Get-Up System”), a take off with open leg straps is not possible. First of all, the pilot would physically feel that the straps are not locked; second the launching paraglider would simply pull the harness up away from the pilot.



Picture 1: A common harness with Get-Up System correctly locked.



Picture 2: With this type of harness, a take off with open latches/straps, as shown, is almost impossible.

On the contrary, race harnesses like the Genie Race with closed speed bag and front container can mean the pilot feels locked into the harness even with leg and breast straps open. The pilot's view of the locking mechanism is almost completely blocked by the cockpit and the speed bag, and he is unable to see or feel if his latches are open or closed. It is also obscured to bystanders, so other pilots are unlikely to notice. The straps are not visibly hanging down between the legs, as with common harnesses (pic. 2) but they are hidden inside the speed bag.



Picture 3: Genie Race with open latches but closed speed bag.

The relatively tight neoprene speed bag gives the pilot a feeling of being closely connected with the harness, even with a completely open restraining mechanism. The pilot in the picture is an experienced XC pilot and was not able to feel whether his latches were open or closed.



Picture 4: Genie Race with open straps but closed speed bag and locked in front-cockpit

The attached cockpit enhances the impression that everything is correctly locked in place, for both the pilot and for third parties that may check him over visually. The open restraining straps are barely visible inside the speed bag and are hard to notice.