

**PARAGLIDER ACCIDENT REPORT AND EXECUTIVE SUMMARY**

|                                                                                                                                |                |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                          |                             |                         |         |
|--------------------------------------------------------------------------------------------------------------------------------|----------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------|-----------------------------|-------------------------|---------|
|                                                                                                                                |                |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                          | Reference:                  | CA18/2/3/9123           |         |
| <b>Aircraft Registration</b>                                                                                                   | Not Applicable | <b>Date of Accident</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | 10 January 2013          |                             | <b>Time of Accident</b> | 1221Z   |
| <b>Type of Aircraft</b>                                                                                                        | Paraglider     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | <b>Type of Operation</b> |                             | Recreational            |         |
| <b>Pilot-in-command Licence Type</b>                                                                                           |                | Recreational                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | Age                      | 50                          | <b>Licence Valid</b>    | No      |
| <b>Pilot-in-command Flying Experience</b>                                                                                      |                | Total Flying Hours                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | Unknown                  |                             | Hours on Types          | Unknown |
| <b>Last point of departure</b>                                                                                                 |                | Lion's Head (Lower Site), Cape Town                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                          |                             |                         |         |
| <b>Next point of intended landing</b>                                                                                          |                | La Med Field, Cape Town                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                          |                             |                         |         |
| <b>Location of the accident site with reference to easily defined geographical points (GPS readings if possible)</b>           |                |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                          |                             |                         |         |
| At 1 Alexandra Street, Bantry Bay, Cape Town at GPS co-ordinates S33°55'31.51" E18°22'58.24                                    |                |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                          |                             |                         |         |
| <b>Meteorological Information</b>                                                                                              |                | Temperature: 27°C; Wind: 225°; Wind speed: 5-10 kts; Visibility: Clear; Cloud cover: None; Cloud base: None; Dew point: 15°C                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                          |                             |                         |         |
| <b>Number of people on board</b>                                                                                               | 1 + 0          | <b>No. of people injured</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | 0                        | <b>No. of people killed</b> | 1                       |         |
| <b>Synopsis</b>                                                                                                                |                | <p>On the 10 January 2013 a fatal accident involving a German tourist occurred, where he launched his paraglider from Lion's Head at the lower site and was airborne. He was seen flying and climbing out to a maximum of approximately 1500 ft. above sea level. Here he encountered a headwind faster than the forward speed and flew backward into the lee side of Lion's Head, overhead Fresnaye. He rapidly descended and crashed into the perimeter gate of a house.</p> <p>A temporary license was issued to the German tourist by SAHPA.</p> <p>The pilot succumbed to his injuries.</p> |                          |                             |                         |         |
| <b>Probable Cause</b>                                                                                                          |                |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                          |                             |                         |         |
| Error of judgement<br>Paragliding                                                                                              |                |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                          |                             |                         |         |
| <b>Contributory factors</b>                                                                                                    |                |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                          |                             |                         |         |
| Lack of knowledge of site.<br>Exceeding of flight envelope.<br>Regulatory short-comings in granting a temporary pilot licence. |                |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                          |                             |                         |         |
| IARC Date                                                                                                                      |                |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                          | Release Date                |                         |         |



## AIRCRAFT ACCIDENT REPORT

**Name of Owner** : F. Till  
**Name of Operator** : Not Applicable  
**Manufacturer** : Icaro  
**Model** : Maverick 2.2  
**Nationality** : German  
**Registration Marks** : Not applicable  
**Place** : Bantry Bay, Cape Town  
**Date** : 10 January 2013  
**Time** : 1221Z

*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 10 January 2013, at approximately 1221Z, a pilot undertook a solo paragliding flight from the lower launch site at Lion's Head in Cape Town. He took off and climbed out to a maximum of approximately 1500 ft. above sea level.
- 1.1.2 Eyewitness accounts say the flight was conducted in the correct wind direction and strength that enabled soaring to be achieved on the Clifton side of Lion's Head.
- 1.1.3 The pilot soared and gained some altitude above the launch site. However, he ventured too far to the right (northern extremity of lift band in line with the trig beacon on top of Lion's Head and the northern tip of Clifton first beach), below the pinnacle of Lion's Head. Here he encountered a headwind faster than this forward speed and flew backwards into the lee side of Lion's Head, overhead Fresnaye.
- 1.1.4 The pilot then attempted to hold his position into the wind, but sunk lower into the turbulence produced by the lee side rotor. The turbulence was in the range of 20 to 30 knots. This caused the wing to enter a severe turbulence-induced uncontrolled spiral dive.
- 1.1.4 He rapidly descended and the paraglider wing struck the perimeter wall of the house.

## 1.2 Injuries to persons

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

## 1.3 Damage to paraglider aircraft

1.3.1 The harness had a base tear and frontal tear.

1.3.2 The airbag container burst open on the left side along the seam, creating a 60 cm open hole.

1.3.3 The SAHPA investigation team found that the paraglider's main canopy lines had been cut to create working space for the rescue personnel, and it was not possible to inspect the lines for failure.

1.3.4 The paraglider's upper wing surface showed distinct signs of tear damage. The paraglider wing had burst two cells (cells 5 and 8, counting outwards from the centre label) on the lower surface a metre apart, off-centre and on the leading edge to the left.



**Fig. 1** Bottom skin cell wall burst



**Fig. 2** Broken line shear



**Fig. 3** Harness base tear



**Fig.4** Harness frontal tear

## 1.4 Other damage

- 1.4.1 The cast iron gate at the entrance to the property in Bantry Bay was substantially damaged.

## 1.5 Personnel Information

### 1.5.1 Pilot-in-command

|                     |                                               |               |      |     |    |
|---------------------|-----------------------------------------------|---------------|------|-----|----|
| Nationality         | German                                        | Gender        | Male | Age | 50 |
| Licence type        | Paraglider -Temporary Licence issued by SAHPA |               |      |     |    |
| License number      | 44572                                         |               |      |     |    |
| Expiry date         | 8April 2013                                   |               |      |     |    |
| Licence valid       | No                                            | Type endorsed | Yes  |     |    |
| Ratings             | Basic                                         |               |      |     |    |
| Medical expiry date | Not applicable                                |               |      |     |    |
| Restrictions        | None                                          |               |      |     |    |
| Previous Accidents  | Unknown                                       |               |      |     |    |

### 1.5.2 Flying experience:

- 1.5.2.1The pilot's flying experience and flying hours are unknown. Refer to section 1.18 for additional information regarding this matter.

## 1.6 Information

### Paraglider:

|                            |                       |
|----------------------------|-----------------------|
| Type                       | Maverick 2 M          |
| Serial number              | 25MAV2C0M             |
| Manufacturer               | Icaro                 |
| Size                       | Medium                |
| Colour                     | Red, white and purple |
| Weight range               | 90 – 110 kg           |
| Production inspection date | 07/2011               |

### Harness:

|              |          |
|--------------|----------|
| Type         | Standard |
| Manufacturer | Icaro    |

### Reserve parachute:

|                 |         |
|-----------------|---------|
| Type            | Icaro   |
| Serial number   | 27631   |
| Production date | 04/2012 |

## MAVERICK 2.2 - TECHNICAL SPECIFICATION

Further, faster, higher: the MAVERICK 2.2 beats clearly its forerunner. It combines excellent glide and climb performance with a high safety felt in the air. It comes in three sizes: S, M und L from 75 - 130 kg.



| MAVERICK 2.2            |                | S       | M        | L         |
|-------------------------|----------------|---------|----------|-----------|
| Area Flat               | m <sup>2</sup> | 24.46   | 27.10    | 29.88     |
| Area projected          | m <sup>2</sup> | 20.24   | 22.42    | 24.72     |
| Span flat               | m              | 12.17   | 12.81    | 13.45     |
| Span projected          | m              | 10.07   | 10.60    | 11.13     |
| Aspect ratio            |                | 6.06    | 6.06     | 6.06      |
| Aspect ratio projected  |                | 5.01    | 5.01     | 5.01      |
| Cells                   |                | 67      | 67       | 67        |
| Take off weight min-max | kg             | 75 - 95 | 90 - 110 | 105 - 130 |
| V trim                  | km/h           | 39      | 39       | 39        |
| V max                   | km/h           | 57+     | 57+      | 57+       |
| Number of risers        |                | 3+1     | 3+1      | 3+1       |
| Glider weight           | kg             | 6.0     | 6.25     | 6.85      |
| Classification          | LTF            | C       | C        | C         |
| Classification          | EN             | C       | C        | C         |

### 1.7 Meteorological information

1.7.1 Information obtained from the South African Hang Gliding and Paraglider Association (SAHPA).

|                |       |             |             |            |       |
|----------------|-------|-------------|-------------|------------|-------|
| Wind direction | 225°  | Wind speed  | 5 to 10 kts | Visibility | Clear |
| Temperature    | 27 °C | Cloud cover | None        | Cloud base | None  |
| Dew point      | 15 °C |             |             |            |       |

1.7.2 According to the SAHPA report, the flight was conducted in the correct wind direction and strength. For further info refer to appendix B

### 1.7. 3 Information obtained from South African Weather Service

|                |       |             |             |            |                           |
|----------------|-------|-------------|-------------|------------|---------------------------|
| Wind direction | 230°  | Wind speed  | 14 kts      | Visibility | Clear                     |
| Temperature    | 21 °C | Cloud cover | 2 - 4 octas | Cloud base | Between 3000 and 5000 AGL |
| Dew point      | 7°C   |             |             |            |                           |

## 1.8 Aids to navigation

1.8.1 The pilot carried a variometer.

1.8.2 A variometer is an instrument which measures the speed of vertical ascent or descent. Variometers are used by pilots of aircraft and gliders in addition to enthusiasts of paragliding and hang gliding. These instruments are viewed as a critical part of the instrument display panel in aircraft, because they provide pilots with some very important information. A variometer is useful for safety and for the purpose of steering, allowing people to track thermals more effectively.

## 1.9 Communications

1.9.1 The pilot had a Type 2M hand-held transceiver, which was considered to be in a serviceable condition. No proof was found indicating that he had broadcast any information during the flight. The last known communication had come from the winch operator, who had informed the pilot of his height. The pilot had not responded but had reacted by performing a standard descent manoeuvre to correct the height.

## 1.10 Aerodrome information

1.10.1 The accident took place outside the boundaries of an aerodrome. The pilot took off from a SAPHA registered paraglider mountain launch.

1.10.2 The launch site used was the Lion's Head (lower site) with GPS coordinates S33°56'17.74 E18°23'17.82".

1.10.3 The elevation of the Lion's Head lower launch site is 1380 ft ASL.

## 1.11 Flight recorders

1.11.1 The paraglider was not equipped with a flight data recorder (FDR) or a cockpit voice recorder (CVR), as they are not applicable to paragliders.

## 1.12 Wreckage and impact information

1.12.1 The pilot was most likely in a spiral dive before the point of impact, and it was evident that the canopy collided first with the fixed object (wall or banana tree) and then the wing snagged the wall close to the main entrance.

- 1.12.2 The paraglider crashed into a boundary wall of a residential home at the corner of Kloof Road and Alexandra Avenue, Fresnaye, Cape Town. The pilot's body was flung into the cast iron gate at the entrance to the property.
- 1.12.3 This impact was of such force it broke two welded bars from the decorative gate and bent the metal towards the house, away from the street.
- 1.12.4 The paraglider's canopy was found to the right on the sidewalk, marked with an unknown white powder.
- 1.12.5 The crash site location and impact points were within a 7 m radius.

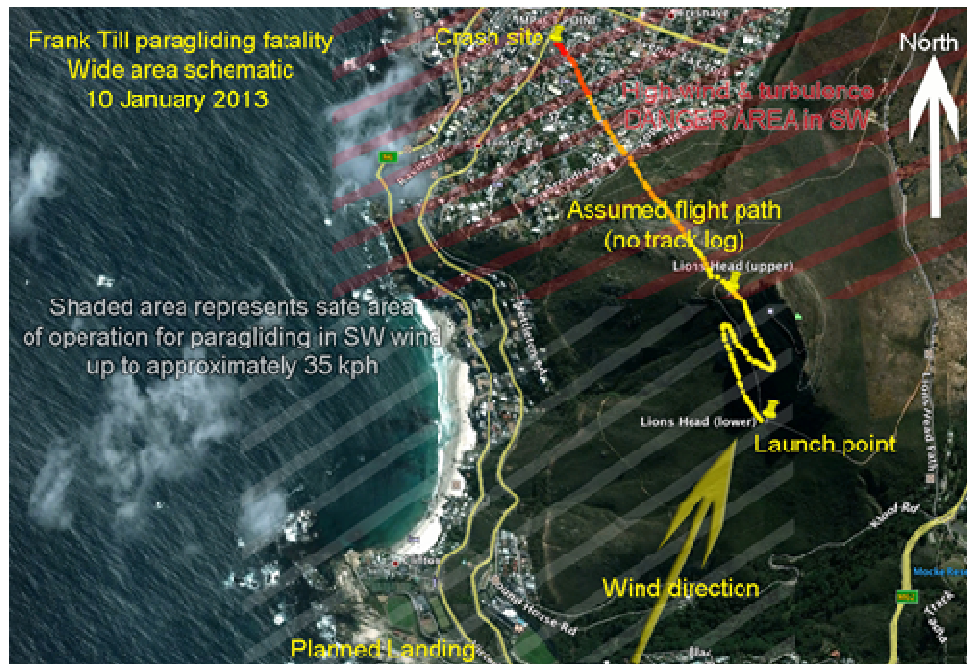


**Figure 5:** Wide area schematic

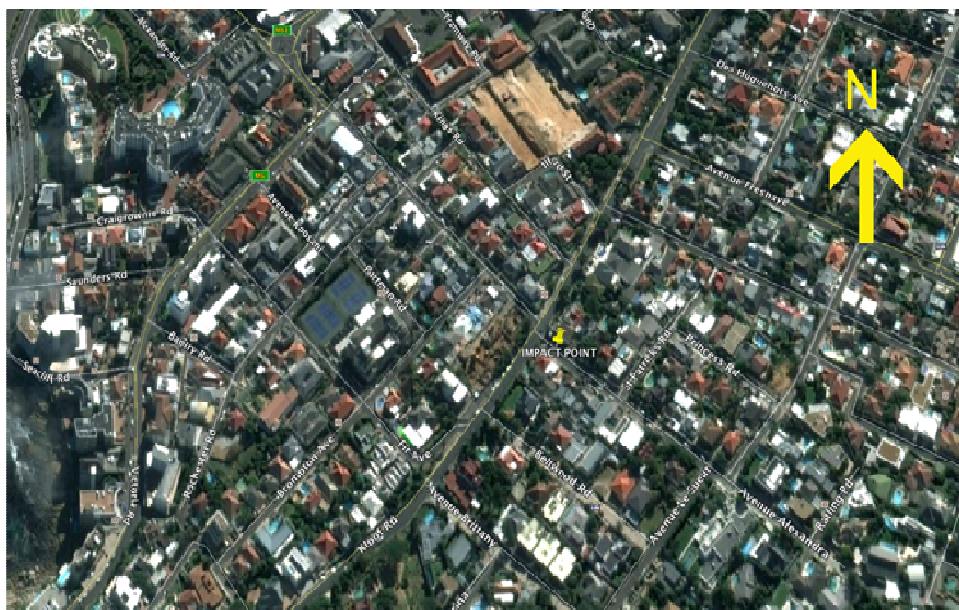


**Figure 6:** Google map image of the impact point

### **1.13 Medical and pathological information**

- 1.13.1 At approximately 1230Z emergency services were notified of the accident. They arrived shortly after the call to attend to the accident scene.
- 1.13.2 The emergency services staff found the pilot attached to the paraglider lying on the public sidewalk in respiratory trauma and not able to communicate.
- 1.13.3 First aid rendered on scene by paramedics and ambulance personnel could not prevent the person succumbing to compound trauma and respiratory difficulty. The pilot died on the scene at approximately 1245Z.
- 1.13.4 The post mortem report concluded that the cause of death was multiple blunt-force injuries.
- 1.13.5 The results of the toxicology tests were not available at the time the report was compiled. Should any of the results, once received, indicate that medical aspects may have affected the performance of the pilot, this will be considered as new evidence and the investigation re-opened.

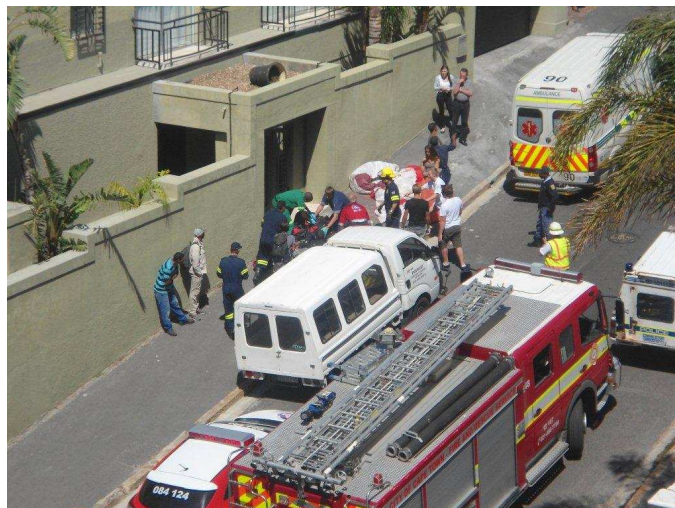


**Figure 7:** Emergency Services at the accident site

### **1.14 Fire**

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

### **1.15 Survival aspects**

- 1.15.1 The reserve parachute had not been deployed. It was found intact after the accident. If it had deployed there is a chance that it might have prevented this fatality, although injury would still have been highly likely.
- 1.15.2 The harness was an approved model and incorporated an airbag compartment that offered some low-level protection to the pilot when making a “normal but hard landing”. The airbag container had, however, experienced impact forces that exceeded its limitations and burst open.

1.15.3 The combination of the undeployed parachute and high impact forces experienced did not make this accident survivable.

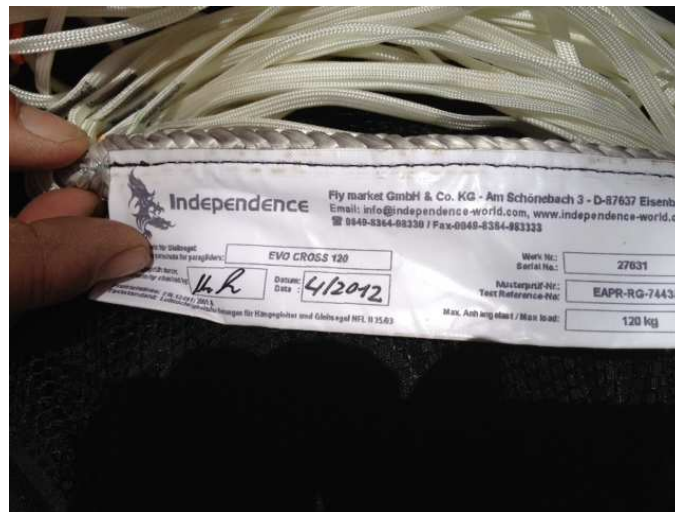


**Figure 8:** The un-deployed parachute

## 1.16 Tests and research

1.16.1 An in-depth description of how paragliding works can be found below.

To fly a paraglider properly, one must understand not only how the equipment works, but how the wind works as well.

- **Thermals** are columns of hot air that rise from the ground. As the sun heats air near the ground, that air expands and rises. Paragliding pilots know they can find thermal columns near areas like asphalt parking lots or dark rocky terrain. If you notice large birds soaring around in the sky without flapping their wings, thermal activity is likely. Once a pilot finds a thermal column, he or she can circle within it until reaching a desired altitude.
- **Ridge lift** occurs when the wind blows against mountains or hills. When wind hits the mountain, it moves upward, forming a band of lift along its slope. Although ridge lift doesn't reach much higher than the mountain or ridge that created it, ridge lift can last for miles -- for example, along a mountain chain.
- **Wave lift** is a lot like ridge lift. It also occurs when the wind blows against a mountain. However, wave lift happens on the downwind side of a mountain and can go much higher than the peak. A paraglider can reach altitudes of more than 35,000 feet (10,668 meters) by utilizing wave lift.

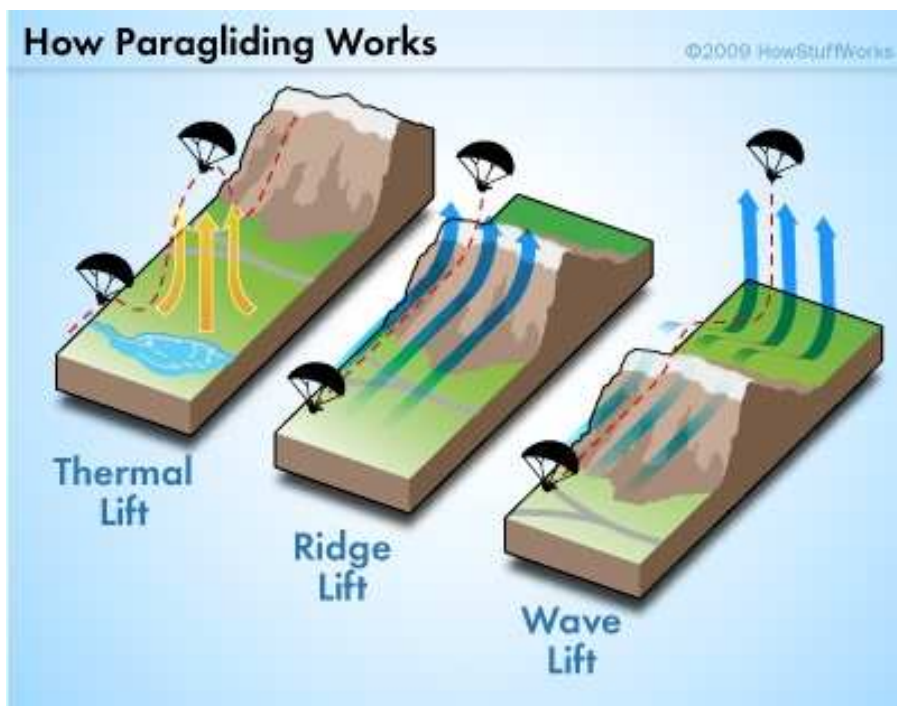


**Figure 9:** How Paragliding Works

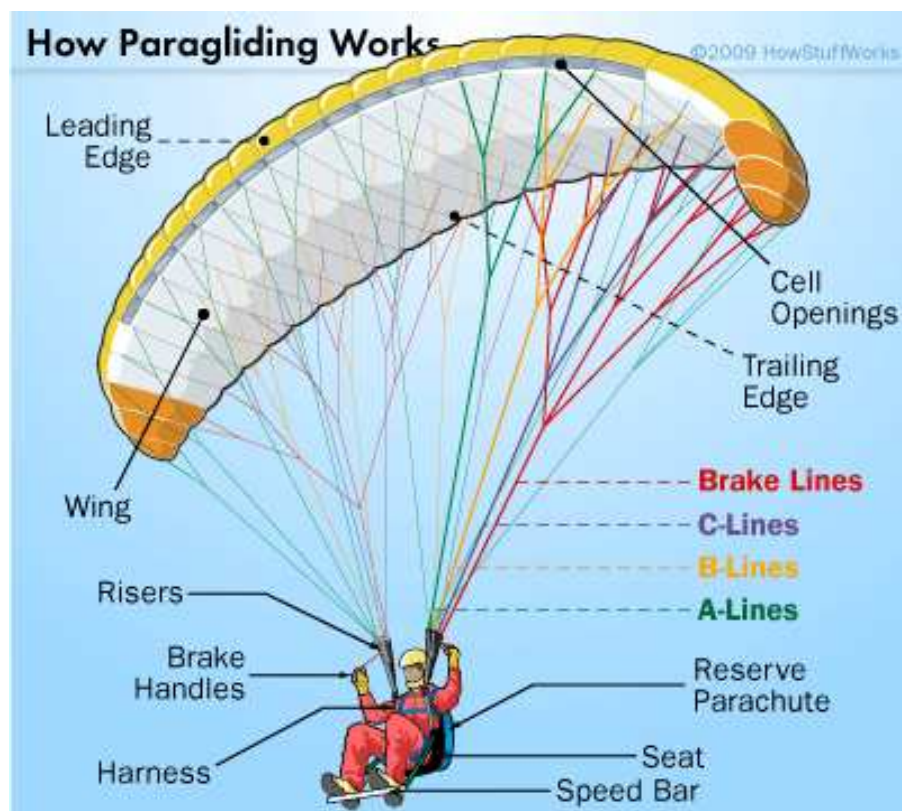


**Figure 10:** Parts of a paraglider

## 1.17 Organisational and management information

1.17.1 The pilot was also the owner of the paraglider and operated it in his private capacity.

1.17.2 The temporary licence was issued by the South African Hang Gliding and Paraglider Association (SAHPA).

1.17.3 The South African Civil Aviation Authority (SACAA) delegated the full investigation process to the South African Hang Gliding and Paraglider Association (SAHPA), which produced an accident report based on their investigation and forwarded it to the Accident and Incident Investigations Division. The information contained in this report was taken from the SAHPA report.

## **1.18 Additional information**

1.18.1 At approximately 1230Z other paragliders were still airborne near Lion's Head and no other pilots experienced difficulty, although none of them mirrored the flight path of the deceased.

1.18.2 The paraglider's canopy and the pilot's harness were inspected by a SAHPA national paragliding representative and the SAHPA chairman on Thursday, 10 January 2013 on scene and again at Sea Point SAPS on Friday, 11 January 2013.

1.18.3 The pilot's temporary licence was issued without receipt of his German licence.

1.18.4 According to the information submitted by SAHPA, the flying experience of the pilot is unknown.

1.18.5 SAHPA sent a request to the DHV (The German Paragliding and Hang Gliding Federation) for the following documents to aid in the verification of the pilot's flying history, but has not received anything to date:-

- DHV (German) licensing records for the pilot
- DHV pilot logbook
- GPS track log

1.18.6 Glen Paragliding Club has since ruled that although the Lion's Head site is graded for a BASIC licence, the new rating for all visiting pilots must be IPPI 5 level (Sports or higher) for solo flights and local pilot briefing. Any less qualified visiting pilots must have an instructor present, other "marker pilots" airborne as indicators and a SAHPA channel functional two-way radio.

1.18.7 According to the report received from SAHPA, the individual who issued the temporary licence impressed upon the pilot not to fly without a comprehensive site briefing first. Refer to Appendix

1.18.8 The operating limitation of the Maverick 2 M paraglider with reference to wind is a tolerance not exceeding 20 knots "SMOOTH".

1.18.9 The safety information signs at the base of Table Mountain National Park and the Glen Paragliding Club are insufficient.

## **1.19 Useful or effective investigation techniques**

1.19.1 None considered necessary for this investigation.

## **2. ANALYSIS**

### **2.1 Man**

The pilot was a German national on vacation in South Africa. He applied to SAHPA for a temporary membership for visiting pilots. The membership was issued on 8 January 2013. The licence was issued without verification of his German licence, as a result the pilot's flying history remains unknown. A request to the German authority has been submitted to determine the pilot's flying history. As the pilot was a German tourist, he didn't have the relevant knowledge and experience of the geographical area and weather conditions of the area he was flying in. It could not be verified whether the pilot had a comprehensive pre-flight briefing.

### **2.2 Equipment**

The paraglider used belonged to the pilot. The paraglider wing, an unmodified standard Icaro Maverick 2 M is an EN Standard class C and designed for intermediate pilots. The paraglider wind limitation for the Maverick 2 M should not exceed 20 knots "smooth". The paraglider was considered to be in a serviceable condition prior to the flight. An inspection of the pilot harness gave no indication of equipment failure on its part. All accessories were connected properly and appeared to be in good working order. The harness was damaged upon impact, indicating the direction of travel and orientation of the pilot at the point of impact. The harness was an approved model manufactured by Independence and incorporated an airbag compartment that offered some low-level protection to the pilot when making a normal but hard landing. The airbag container had burst open on the left side along the seam, creating a 60 cm open hole resulting from the impact. As a result of the impact the paraglider wing had burst two cells (cells 5 and 8, counting outwards from the centre label) on the lower surface a metre apart and off-centre on the leading lee to the left. The paraglider wing was cut away by the medics who first attended at the scene and it was not possible to inspect the lines for failure. The reserve parachute was found intact at the accident site.

### **2.3 Environment**

The flight was conducted in the correct wind direction and strength. The prevailing weather conditions generated a favourable lift band in the divergence area windward of Lion's Head as well as established areas of the venturi on the south (towards Kloofnek) and the north (right side facing Bantry Bay) sides of Lion's Head, where the wind accelerated in laminar flow before resulting in severe turbulence as it dispersed downward over the lee side slopes of Lion's Head and Signal Hill. The pilot soared for a while and then ventured too far to the right below the pinnacle of Lion's Head and was caught in the venture, which resulted in his encountering wind strength faster than his forward speed. He then flew backward into the lee side of Lion's Head, over Fresnaye. He attempted to hold his position into the wind, but sank lower into the turbulence created by the lee side rotor, causing the wing to enter a severe turbulence-induced uncontrolled spiral dive. The paraglider was flying in an area where he did not fully understand and/or have knowledge of the wind conditions and the geographical layout of the area, as he was not a local resident.

### **3. CONCLUSION**

#### **3.1 Findings**

- 3.1.1 The pilot was a German tourist who was operating under a temporary membership for visiting pilots.
- 3.1.2 The temporary licence was issued without proof to verify if the pilot had a valid German licence and was therefore not valid at the time of the accident.
- 3.1.3 Verification of the pilot's licence particulars remains outstanding, as the German Authority has not yet supplied the information to SAHPA despite several requests. As a result the flying experience of the pilot is unknown.
- 3.1.4 Being a tourist, the pilot did not have the relevant knowledge and experience of the geographical area and weather conditions of the area he was flying in.
- 3.1.5 The paraglider was considered to be in a serviceable condition prior to the flight.
- 3.1.6 The paraglider wing was cut away by the medics who first attended at the scene and it was not possible to inspect the lines for failure.
- 3.1.7 The reserve parachute had not been deployed and was found intact at the accident site.
- 3.1.8 The harness was an approved model as manufactured and incorporated an airbag compartment that offered some low-level protection to the pilot when making a normal but hard landing.
- 3.1.9 Due to the high impact forces, the airbag container burst and did not provide any protection, as its limitations were exceeded.
- 3.1.10 SAHPA's process of issuing a temporary visiting licence had been ineffective in ensuring that the pilot was suitably qualified and rated to carry out the flight in question.
- 3.1.11 Glen Paragliding Club has since ruled that although the Lion's Head site is graded for a BASIC licence, the new rating for all visiting pilots must be IPPI 5 level (Sports or higher) for solo flights and local pilot briefing. Any less qualified visiting pilots must have an instructor present, other "marker pilots" airborne as indicators and a SAHPA channel functional two-way radio.

#### **3.2 Probable cause/s**

- 3.2.1. Error of judgement
- 3.2.2 Paragliding

#### **3.3 Contributory factors**

- 3.3.1 Lack of knowledge of wind conditions at the paragliding site.

3.3.2 Loss of control in flight

3.3.4 Regulatory short-comings in granting a temporary licence

## **4. SAFETY RECOMMENDATIONS**

- 4.1 It is recommended to SAHPA that stringent measures be put in place for the issuance of temporary paragliding licences for visiting pilots.
- 4.2 It is recommended to SAHPA that in the case where a visiting pilot cannot provide adequate proof of his or her skill level for unsupervised solo operations, he or she should be treated as one skill grade lower than they claim and be supervised accordingly, and a competency test should be carried out and signed off by a suitable observer or instructor.
- 4.3 It is recommended to SAHPA that they should provide a small printed information booklet which should include key site information, clubs and contact details. Unsupervised "visitor flights" should be strongly discouraged.
- 4.4 Table Mountain National Park and the Glen Paragliding Club should jointly erect safety information signs at launch sites, as the signage at the base of the mountain is inadequate.

## **5. APPENDICES**

- 5.1 Appendix A - Paraglider Manual
- 5.2 Appendix B - Temporary Membership Application
- 5.3 Appendix C - SAHPA Accident Report



## MANUAL

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“C”

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- *the correctly completed guarantee card is filled out (can be found in this manual or on our website [www.icaro-paragliders.com](http://www.icaro-paragliders.com)) and sent to Fly & more Handels GmbH ICARO Paragliders within 6 weeks after purchasing the glider at an official dealer/school of ICARO paragliders and*
- *the first 2-year-complete-check is carried out by an from ICARO paragliders authorised check establishment.*

***The Guarantee will be prolonged to  
next 2-year-complete-check.***



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***Congratulations on buying your  
MAVERICK 2 and welcome to the  
family of ICARO- pilots!***

This paraglider was produced with great care so that you can enjoy many flights.

In order for you to feel comfortable with your paraglider right from the start, we recommend that you read this manual.

Apart from flight information, this manual also contains important safety instructions. You must get to know your paraglider well.

This manual also contains important care and operating instructions which are vital for your safety and preservation of your paraglider.

Should you decide to sell this paraglider at a later date, please pass on this manual to the new owner.



### IMPORTANT INSTRUCTIONS FOR USING AN ICARO PARAGLIDER

- THE USE OF THIS PARAGLIDER IS ENTIRELY AT YOUR OWN RISK. EVERY PILOT BEARS THE RESPONSIBILITY OF HIS/HER OWN SAFETY.
- EVERY PILOT MUST DO A THOROUGH PRE FLIGHT CHECK BEFORE EVERY FLIGHT AND MUST ENSURE THAT THE PARAGLIDER IS PROPERLY CHECKED AT REGULAR INTERVALS.
- THIS PARAGLIDER HAS BEEN CERTIFIED AND BUILT IN COMPLIANCE WITH DHV RULES AND REGULATIONS.
- DO NOT CHANGE THE CONFIGURATION OF YOUR GLIDER. IF YOU DO, YOU WILL LOSE YOUR DHV CERTIFICATION.
- EVERY PILOT IS RESPONSIBLE FOR THE SAFE OPERATING CONDITION OF HIS/HER PARAGLIDER!
- EVERY PILOT IS RESPONSIBLE FOR THE SAFE OPERATING CONDITION OF HIS/HER PARAGLIDER!
- IT IS A PREREQUISITE THAT EACH PILOT IS IN POSSESSION OF A VALID PILOTS LICENCE.
- THE MANUFACTURER WILL NOT ACCEPT ANY CLAIMS!

### **IT IS STRICTLY PROHIBITED TO FLY THE MAVERICK 2**

- WITH INSIGNIFICANT TRAINING AND EXPERIENCE OF THE PILOT
- OUTSIDE THE DHV SPECIFIED WEIGHT RANGE
- IN RAIN, SNOWFALL, CLOUDS OR FOG
- IN TURBULENT WEATHER CONDITIONS
- WITH ROLL ANGLES EXCEEDING 90°
- ACROBATICS ARE HIGHLY DANGEROUS AND THEREFORE NOT PERMITTED



## I. Your **MAVERICK 2**

### **Characteristics of MAVERICK 2**

**MAVERICK 2** offers the pilot a high safety potential, but the pilot must observe the rules of the air for all flight sports, especially the rules of right of way so as to avoid dangerous situations.

Our main design goal was to develop sophisticated wing profiles that result in maximum safety combined with well balanced handling. These profiles were calculated and designed one by one. In combination with an optimised leading edge, we created a paraglider with high safety factor.

The cleverly designed line gallery gives the **MAVERICK 2** a line layout, which ensures stability and excellent flight characteristics. The use of extensive internal v-ribs makes the canopy more stable, especially in turbulence, and maintains a cleaner, more tensioned, wing profile. This also causes the load to be distributed more uniformly throughout the glider, allowing for a reduced number of line attachment points. Fewer lines lead to less drag and an increase in glide performance

**"MAVERICK 2 is not suitable for training".**

### **Technical data**

| <b>MAVERICK 2</b>      |                | <b>S</b> | <b>M</b> | <b>L</b>  |
|------------------------|----------------|----------|----------|-----------|
| Wing Area flat         | m <sup>2</sup> | 22,94    | 27,10    | 29,88     |
| Wing Area projected    | m <sup>2</sup> | 18,98    | 22,42    | 24,72     |
| Wing Span flat         | m              | 11,79    | 12,81    | 13,45     |
| Wing Span projected    | m              | 9,75     | 10,60    | 11,13     |
| Aspect Ratio           | A/R            | 6,06     | 6,06     | 6,06      |
| Aspect Ratio projected |                | 5,01     | 5,01     | 5,01      |
| Cells                  |                | 67       | 67       | 67        |
| Take off weight        | kg             | 70 - 90  | 85 - 110 | 105 - 130 |
| V trim                 | km/h           | 39       | 39       | 39        |
| V max                  | km/h           | > 57     | > 57     | > 57      |
| Weight                 | kg             | 5,85     | 6,35     | 6,45      |
| Certification          | LTF/EN         | C        | C        | C         |

### **Canopy**

Porcher Marine NCV 9017 is used for the **MAVERICK 2** in different colours. Selected for its durability and resistance to UV-damage and it reduces weight.

### **Lines**

To ensure durability, we use Liros Dynema and Edelrid Technora with HMA core (High Molecular Aramid) and a PE covering for the other lines. Depending on the line level, we use different line diameters.



**Caution:** *The length of the steering lines is set correctly at the factory and should not be changed. The improper adjustment of the steering lines can cause severe changes to in flight behaviour.*

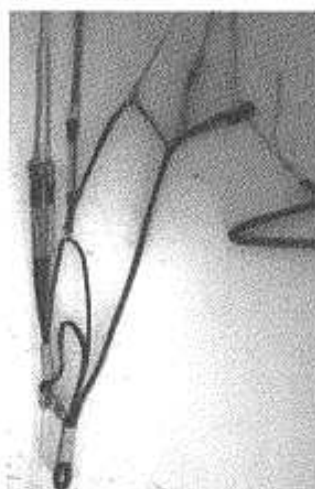
All lines were hung and sewn with precision. The end control of all line lengths is documented for all paragliders produced by ICARO paragliders. The complete geometry of the lines is shown on the single line plan, which you find in the annex of the manual.

### **Risers**

**MAVERICK 2** has 3 fold risers with acceleration system. Big and Small Ears are made easier by the separation of the A-risers. Simple launch behaviour, B-Stall, steering with the D-risers and an optimal geometry for accelerated flight were important aspects in the development of these risers. We use 10 mm Kevlar with PE covering for protection (Race-Risers) and Maillon Rapide oval, 3,5 cm.



Risers not accelerated



Risers accelerated

### **Acceleration system**

When you use the accelerator, the D-risers remain unchanged the C-, B and A-level aero design-related under the D-level at full acceleration. This decreases the angle of attack of the whole glider and increases speed.

#### **How to mount the acceleration system at the harness**

Put the ropes which are attached at the foot bar through the rings at the front right and left of the harness from the outside and then through the eyelets on the side.

Afterwards put the ropes which are now running inside the harness through the pulley which can be found at the left and right of the sitting board.



The ropes which have been put through the eyelets and the pulley need to be bypassed on the outside along the harness bands and fastened with the brummel hook.

Adjust the length of the rope in this way that both legs are straightened completely when flying maximum speed (both pulley of the risers are laying on top of each other).

**Attention:** *Please pay attention that the glider will not be pre-accelerated, while the accelerator is loosened, when the acceleration ropes are set too short.*

At the start we advice to fix the accelerator with the Velcro which is attached at the front of the sitting board, in order to avoid tripping while pulling up the glider or when starting up.

**Attention:** *The description refers to the rope characteristics of an ICARO harness. When using a different harness the application can be different.*

*If you have any problem or queries to the assembly please contact your flight school or get in touch with ICARO paragliders directly.*

#### **Functionality**

Before starting the brummel hook (foot accelerator-glider-riser) are stuck together.

When flying normal all risers have the same length. When using the accelerator system the risers A, B and C are shortened by a constructive exactly defined length and therefore the angle of attack of the canopy is smaller. The length of the D-riser however is not changed.

This causes a reduction of the angle of attack of the whole glider and results to an increase of speed.

#### **Harness**

**MAVERICK 2** certification is valid using any harness which has been categorized by the DHV "GH". Harnesses with the category "GX" and other special single purpose harnesses are not recommended because of the cross-braced strapping which detracts from the ability to steer by weight shifting.

To find out which class of harness your harness belongs to, check the certification sticker or ask the manufacturer. A list of all harnesses certified by the DHV is available from the DHV.

## **II. FLIGHT TIPS**

### ***Pre Flight Check & Flight Preparation***

It is important to perform a pre flight check before taking off. Please give the following points your special attention:

- Whilst unfolding your paraglider check the canopy and cell walls for damage. Always take into consideration that the paraglider may have become damaged during transportation.



- Check the lines for knots, twisting and damage. Also check the brake lines for knots and kinks. Check the main brake lines. They must be symmetric.

**Caution:** *The correct length of the main brake line must not be altered.*

- Check your harness and make sure that all connections to pilot are correctly closed. Check that all karabiners are closed and can not be opened accidentally in flight and that the risers are not twisted.
- Please ensure that you are wearing gear which offers optimal comfort and protection (helmet with chin protection, boots, gloves and an overall).

After that lay your glider in an arc form and observe the following points:

- When you pull on the A-risers, the lines in the middle of the wing should be under tension before the lines on the wing ends. This ensures an even easier start.
- Separate the line groups carefully and bring the risers in order.
- All lines must run freely from harness to canopy. It is equally important that the lines are unhindered and cannot get caught up during the launch. If the risers are not twisted, the brake lines run freely through the roll on the D-riser to the back of the canopy.
- It is also important that no line is under the canopy. A cravat during the launch can be extremely dangerous.

### **Launch**

The most important thing during the take-off is, like at all other gliders too, not the force but the constancy of the pull.

Hold the A- risers but not the baby- risers (they are for small and big ears) and the handles of the brakes. Use progressive pressure on the A-risers and the energy of your own body weight until the wing is fully inflated overhead.

The canopy of the **MAVERICK 2** is inflated quickly. Hold you arms out and up as an extension of the A-lines. When there is no pull from the lines and the wing is overhead, use slight pressure on the brake. Look up and make sure that the canopy is fully inflated. After a few accelerating steps and at the same time let go of the brakes gently, you will take off. Then use slight pressure again on the brakes to fly at a speed with minimal sink rate.

### **Turning**

A combined steering technique (weight shift and pulling the brake line on the inside of the curve) is suitable for every situation. The **MAVERICK 2** is agile and reacts to steering impulses quickly and directly. Strong, one sided pulling of the brakes brings the **MAVERICK 2** into an obvious side angle and the glider flies fast steep curves until spiral dive begins.

**Caution:** *If the brake lines are pulled too fast or too far the glider will be stalled! A one-sided stall is signaled clearly by: The curves's inner side of the wing is getting soft, and nearly stops. In this case you have to release the brake-line!*



### **Acceleration (with speed system)**

The length of the accelerator is adjusted to the left and right of the foot pedal so that when your leg is fully extended, then the acceleration is at maximum – both rollers are touching.

Before using an acceleration system you must ensure that it is attached properly and that the speed system and harness are adjusted to each other for best performance. For the majority of your flight you will not use the accelerator. For better penetration in headwinds you can fly faster by using the accelerator system. When you want to descend quickly and the ears have been folded in, push down on the foot accelerator.

The flight stability of the **MAVERICK 2** remains intact at increased speed because of the adapted geometry of the acceleration system.

Flying with an integrated acceleration system should be used in proper doses. The more turbulent the weather conditions and when near the ground, the less acceleration should be used. Using the accelerator decreases the angle of attack and can make the glider more prone to collapse.

Therefore excessive use of the accelerator near the ground should be avoided. The increase in speed using an acceleration system is considerable and should not be underestimated.

**Caution:** *Do not use the acceleration system and brakes at the same time! It is very dangerous to use both simultaneously as it can result in serious collapses.*

### **Landing**

The **MAVERICK 2** is very easy to land. Always stand up in the harness in the landing position very early in order to be able to react as fast as possible to sudden events. Give yourself plenty of options and a safe margin of error. Set up your final landing leg to face into the wind to minimize groundspeed.

Once below 25 m and on final landing approach, the glider should be allowed to fly at trim speed by going "hands up" with the brakes. This allows more energy to be converted into a full flare. Then, 2 m above the ground, both brakes are applied smoothly and forcefully to full arm extension, below the seat of the harness, resulting in a full flare and reduced speed on landing. In stronger winds, the flare can be reduced or eliminated to prevent being blown back when landing.

**Caution:** *If you leave the inflated leading edge bang on the ground, this can cause the cell walls to burst! Please always keep check on other pilots in the air so that you can avoid a collision.*

*Do not brake it too much, to avoid a stall of the glider in this very low altitude!!*

*Do not reduce height by "pumping" with the brakes.*

*Do not fly sharp turns or changing the direction while landing.*

### **Towing**

Generally the **MAVERICK 2** is also allowed for towing. You have to note the regulations of the country where towing is in practice.



### **Ground Training**

In order to get to know your **MAVERICK 2**, we recommend that you practise with your glider on the ground. Pulling up in flat gradients is great practise for fine tuning your launch techniques. Here you can get to learn the reactions of your glider without any stress and hectic. Ground practise pays off in the air.

### **Thermals and flying in turbulences, "active flying"**

Through the innovative profile in combination with the battens in the profile nose and the far back attached A-level the **MAVERICK 2** softens in a great manner. The advanced pilot may think that the conditions are not very turbulent. We recommend flying your old glider with the same conditions in order for you to get a feeling for the cushioning effect of the **MAVERICK 2**. The **MAVERICK 2** has an extremely high stability due to its construction.

We advise you to apply the brakes at all times whilst flying in turbulences. You hereby increase the opening angle and the wing is more stable. At the same time the pilot has a better feeling for the canopy via the brakes.

When the pressure on the brakes decreases, then pull down more on the brakes for a short moment to avoid a possible collapse. According to the strength and length of turbulences this can be more than 100% of the brake path for a short time. Under normal conditions, with 100% of the brake path is the point where deep stall begins.

When flying into strong thermals please pay attention that the canopy does not remain behind the pilot. This is avoided by releasing the brakes when entering an up-wind to increase speed. Vice versa the glider must be slowed down with the brakes if the canopy falls before the pilot when entering a down-wind or exiting a thermal. We recommend increasing speed when crossing a downwind or during headwind.

This type of flight technique is called "active flying". The pilot may roll his body with weight shift to move with the glider when the glider rolls to the right or left. These subtle adjustments keep the glider flying smoothly.

## **III. Descent Techniques**

**Caution:** *Training of descent techniques and simulation of flight incidents (SFI) should only take place at professional safety training seminars with professional trainer and only while flying over water.*

Use the manoeuvres Small/ Big ears with the acceleration system, B-line-stall and spiral dive as ways of descending.

### **Big & Small Ears**

The aim of this manoeuvre is to descend in strong thermals.

Take the outer A-risers of the **MAVERICK 2** in your hand, without releasing the brakes and pull down leaving it run through your hands (use gloves!). Sink rate increases to 5m/ sec but not the forward speed. If you use the acceleration system



then sink speeds of 5m/ sec can be achieved. Reopen the wing by pushing up with your hands and if necessary then pump the brakes with short symmetric movements. For directional control while using the big ears, you should use weight shift.

Before landing, release the pulled down A-risers to achieve normal sink speed for a gentle landing. Just like in the C-line-stall manoeuvre, keep the brakes in your hand. In this way, it is possible to fold in up to two thirds of the leading edge.

**Caution:** *The pitch angle of your paraglider is increased using small and big ears, the brake path is shortened and the risk of inducing a deep stall is high. Using acceleration system during this manoeuvre helps reduce these negative risks.*

*Never attempt tight turns or spirals with Big Ears, as the A-lines will be over stressed.*

### **B-Line-Stall**

It is common knowledge that to enter and hold a B-line-stall requires considerable strength. Entering a B-line-stall in strong upward air movements may not be possible for weaker pilots, even with gliders equipped with easy enter B-line-stall aids.

Entering a B-line-stall can also be damaging to the canopy material because of the strain on certain points of the material. This is mentioned in several other user manuals.

**Caution:** *It is very dangerous to exit a B-line-stall incorrectly and following errors must be avoided:*

- *Exit is too slow*
- *Releasing the B-line-stall aid without simultaneously pushing up with your hands*
- *Using brakes during or directly after exiting*
- *Pulling too far on the B-line-stall aid, so that the A-lines are pulled too*
- *Brakes must not be shortened by twisting around your hand during the manoeuvre*

### **Spiral Dive**

To initiate a spiral dive, look in the direction you want to go, roll your body weight in that direction and at the same time smoothly pull down on the inside brake. The **MAVERICK 2** will start to turn, speed up and then drop into a spiral. To keep the wing under control you must pull and release the inside brake. Safe decent rates of 7-9 m/ sec are possible. Please ensure that you have enough distance to the ground to exit the spiral dive.

Please exit slowly. Bring your body weight back to a neutral position and as soon as the wing levels out, apply the brakes gently. This procedure should be done slowly and will take a couple of turns to complete.

The **MAVERICK 2** does not have a tendency for stable spiral dive. If under certain conditions, it should go into a stable spiral dive then actively exit the manoeuvre by



bringing your weight into a neutral position, release the brakes of the inner curve side and brake gently on the outer curve side until you notice that the wing starts to level out. Then gently brake on the inside curve for several turns until normal flights returns.

**Caution:** *If you pull abruptly and too far on the brakes, the canopy may enter a negative spin. When entering a spiral dive keep the brake on the outer curve released.*

*Nearly every paraglider at some point reaches a sink-speed at which the canopy moves with its frontal edge downwards and stays in this position and keep spiralling (stable steep-spiral), even if the brake-line is released. During a stable steep-spiral very high G-forces will occur, which require a high strain of a physical fit pilot!*

#### IV. Flight Incidents

##### **General information for safety training with the MAVERICK 2**

The innovative concept of the MAVERICK 2 offers an unmatched stability in non-accelerated and accelerated flight through strong turbulences.

This stability has also an effect when stimulating clappers and front stalls:

The forces to get the glider clapped are extremely high and in accelerated flight hardly to manage.

With lots of force and a courageous pull of the A-risers you can still manage big clappers.

The faster you pull the less fierce will be the reaction in the canopy.

This is because the profile is bent down due to the built in battens when pulling the A-risers. Through this and the negative flow angle a low-pressure develops on the lower sail which accelerates the glider downwards.

This is less distinctive in conventional gliders and the reaction is according to this more moderate.

The conventional clapper generated through pulling the A-risers has hardly anything to do with reality. The deformation of the profile in real flight is missing; clappers are possible but the acceleration downwards is missing mostly.

This is why the real clapper behaviour is being simulated by using an A-folding line at certification.

Clapper and front stalls which you create through pulling the A-risers during safety training for example will turn out much more fiercely than is real flight.

The advantage is that you can practise the correct reaction. The training effect is very high and the increased safety you gain covers all situations in free flight.

For this reason we offer all interested Safety trainers a practical and theoretical briefing for the MAVERICK 2.

**Caution:** *We recommend that you only book safety training with trainers who have been briefed in this matter. The simulation wants to be learned because the MAVERICK 2 can not be clapped as any other glider will.*



### **Deep / Parachute Stall**

Your **MAVERICK 2** has been carefully designed to resist entering deep stall. If you pull strongly on the rear risers the **MAVERICK 2** normally ends a deep stall independently when you release the rear risers. Before exiting a deep stall please ensure that the brakes are fully released. Actively exit the deep stall by reaching up and push forward with both palms on both A-risers or pull on the risers.

**Caution:** *Never pull the brake-lines during a parachutal stall, because the glider would go into a full stall immediately.  
Does the glider stay in a repetitively parachutal stall without any noticeable reason the glider have to be checked before the next flight by your dealer or by the manufacturer.*

### **Asymmetric Collapse**

While flying in turbulent conditions it may occur that a portion of your glider deflates. This is normally not a critical situation and re-inflation occurs quickly without any input from the pilot. However, just like in flying in turbulences, please pull gently on both brakes. Re-inflation is speeded up by counteracting the turning movement of the canopy until normal forward flight return. Then pump the brake line on the collapsed side.

**Caution:** *If the collapsed part of the canopy is very big, you have to break the open side very dosed (not too much!) to avoid a stall.*

### **Symmetric Collapse**

A glider may collapse symmetrically when flying through sudden down draughts in a front stall or by pulling strongly on the A-risers. The leading edge collapses abruptly along the whole wing span. The pendulum movement is eased by applying the brakes and speeds up re-inflation. Your **MAVERICK 2** normally re-inflates promptly in a symmetric collapse without pilot input. Applying the brakes symmetrically will speed things up.

### **Cravat**

This never occurred during any of our test flights. However, it could happen in rare circumstances that a part of the glider, particularly a wing tip, gets caught in its own lines (e.g. in extreme turbulences or an error in the visual line check of the canopy before take-off. Large cravats result mainly in uncontrollable spiral dives.

There are a few ways to try to rectify this situation:

- Try pumping on the side of the cravat
- Pull the stabilo line (the outermost B-line)
- Actively collapse the cravat side and release
- If all else fails, attempt a full stall – only if sufficient altitude remains.

**Caution:** *Freeing a cravat may be complicated, even for an experienced pilot. If you have exhausted all these options, you are uncertain how to proceed and you do not have control over your glider and you are running out of altitude, immediately deploy your reserve parachute.*



### **Emergency Steering**

Should it no longer be possible to steer your **MAVERICK 2**, for example due to a broken line, the glider may be steered by gently pulling on either D-riser.

**Caution:** *Handling will be more direct so be careful not to pull too hard. A good way to get practice is during ground handling.*

### **Negative Spin**

A negative spin should not happen in normal flight. However, spins are often performed in SFI training to experience the gliders limits and so that pilots have a better understanding of the safe range of brake use.

If the pilot abruptly applies full brake to one side of the glider while the other side is at zero brake, the faster side may fly around the braked and stalled side resulting in a spin. Alternatively, if flying very slowly with almost full brakes on both sides, if one hand releases one brake suddenly, while the other continues with full brake, the glider may enter a negative spin.

To exit a spin with your **MAVERICK 2** just do "hands up" to release the brakes and the glider will return to normal flight.

**Caution:** *If you do not have control over your glider and you are running out of altitude, immediately deploy your reserve parachute.*

### **Full Stall**

To initiate a full stable stall, apply both brakes to maximum arm extension. If possible grasp the seat of your harness to assist keeping your arms locked.

**Caution:** *It is imperative that the pilot fully completes this manoeuvre and holds on, as a premature release while the glider is still falling back may cause the glider to rapidly dive ahead past the pilot. There is a possibility of the pilot landing in or entangling in the glider.*

Do not –under any circumstances- release at this point. The glider will slow down and stall, falling quickly behind the pilot. Avoid the urge to release. The pilot will swing back under the canopy and finally the canopy will stabilize to a full stall.

Once in a stable stall, the manoeuvre can be completed. Release the brakes just a little and let the glider fill until it regains shape. Then release the brakes fully and your **MAVERICK 2** will return to normal flight.

## **V. Service, Repairs and Maintenance**

### **Care Instructions**

Even with good care and maintenance, just like any item exposed to the elements, your glider can wear out after a certain amount of use. This can change flight behaviour and safety. We recommend a regular safety inspection of the canopy and all lines.



- If you wish to clean your glider it is best to use warm water and a soft sponge. Store your glider in a dry and dark place, ideally between 5° and 30° Celsius. Do not store it near chemicals or petrol.
- If you will not fly for longer period, store the glider releasing all compression straps and take it out of its backpack so that the fabric is not compressed, creased or stretched.
- Avoid storing your glider for days at a time in a hot car.
- If the glider has become wet, lay it out so that air can get to all areas of the fabric.

**Caution:** *It may take several days for your glider to dry out completely especially the lines, which take longer than the fabric. Do not fold and store your glider prematurely if it not completely dry. The performance of a wet glider can change significantly.*

### **How to pack your glider**

It is not necessary to pack the glider in a special way. ICARO paragliders recommends the following method:

- The glider should be laid out neatly, the lines sorted, the risers stowed away either at the trailing edge or at the leading edge. The pilot stands at the leading edge by the outspread glider and a helper at the trailing edge.
- Both start on the inner side and putting one lane onto the next pulling the end off the glider more and more to the middle. Like this the reinforcements can be put on top of each other without being flexed.
- The same is done on the opposite side. Like this only two lane wide packages are left.
- These are being folded on top of each other and beginning at the trailing edge during simultaneous pressing to get rid of any air. The first fold over of the package should be between 30cm and 50cm. This way the material of the lower- and upper sail will not be stressed at the same area. **ICARO paragliders recommends not rolling in the glider material since different strains apply to the material. Through folding this can be avoided.**
- The last fold is carried out at the side of the leading edge. This is wrapped in direction of the trailing edge and packed between the part which has been folded before. Please pay attention that the reinforcements aren't flexed.
- The compression band is being attached to the glider package crossways to the folding direction and fastened only to hold the glider gently.
- Afterwards put the package into the glider bag....ready!

In order to pack your glider in the same way as above without a helper there are two possibilities:

1. Lay out your glider neatly, sort your lines and stow away your risers either at the trailing edge or at the leading edge. You begin at the trailing edge and fold these together. Like this the glider lays fan-shaped in front of you. Now you put the leading edge on top without flexing it and carry on folding the glider, as described above.



2. You use an ICARO fast packing bag (available online in our shop).

The fast packing bag has many advantages – not only folding your glider without any help.

- Even at strong winds the glider can easily be handled since the canopy does not need to be spread out for folding.
- The glider is lying during the procedure on the material of the packing bag therefore it is shielded from stones, plants and humidity of the ground.
- Through the fixation in the front part of the packing bag the reinforcements of the leading edge stay flex-free on top of each other.

### **Repairs**

Small holes in the canopy can be repaired by the pilot by using self adhesive sailcloth on both sides of the perforation.

Damage to the lines or any other repairs should only be carried out at an authorized ICARO centre. If your **MAVERICK 2** needs to be repaired, please contact your local ICARO paragliders dealer.

### **Inspection, Prerequisites and Personal qualification**

After 200 flight hours or 24 months, it is important to have your **MAVERICK 2** inspected by a trained ICARO technician. Without regular certified inspections, your glider will lose its certification and guarantee.

You will need the following items in order to perform a paraglider inspection:

- Standardized inspection report
- Porosity meter
- Spring scale
- Equipment for measuring line lengths
- Equipment for line strength testing
- Sewing machine
- Big, clean and bright room

Technical specifications about your glider (type, serial number, size and year of production). Please call Fly & more Handels GmbH ICARO paragliders for information.

A three week course at Fly & More GmbH, specified to a glider type together with a legal flight license are the necessary prerequisites for permission to inspect ICARO paragliders. For questions about the costs and times of paragliding inspection courses please contact Fly & more Handels GmbH ICARO paragliders.

### **Inspection Instructions**

#### **Record Information**

Spread out your paraglider in a big bright room and make a note of information such as model, type and serial number.



### **Porosity Test**

Use your porosity meter to perform porosity checks at 4 different places of the canopy. The results are recorded in the inspection protocol and are to be evaluated according to the internal guidelines of the workshop.

### **Visual Control of the Canopy**

Hang up the canopy so that you can do a visual check of your canopy. Check for perforations in the upper and lower sailcloth, damaged stitching between the cells, and damage to the leading/trailing edge reinforcements. Each cell must be checked.

### **Visual Control of the Risers and Lines**

Check the risers, the trimmers, the stitching at each line loop, the brake lines, all seams and line contact points. Each line must be measured and inspected for kinks.

### **Strength test of the lines**

One complete A-and B- line must be removed, measured and submitted to a strength test. The measured value of each individual line must be noted in the inspection protocol. The minimum of the lines strength are 125% of the normative guidelines.

### **Measurement of the lines**

Measure every single line while stressing it with defined tractive force. Compare with the line plan. The results are recorded in the inspection protocol and are to be evaluated according to the internal guidelines of the workshop.

### **Assessment**

The measurements of all procedures are noted in the inspection protocol. When all facts have been recorded, the technician must make a general assessment.

Check the backpack for damage to the zips, seams and straps and repair if necessary with a sewing machine.

### **General Remarks**

Any other repairs, corrections etc. to the general condition of the paraglider must be evaluated. A copy of the results of each inspection must be sent on to Fly & more Handels GmbH ICARO paragliders.

If the glider is not in great condition, the technician can decide to shorten the inspection interval time from 24 to 12 months. The technician must report any unusual faults to Fly & more Handels GmbH ICARO paragliders within 3 days.

### **Inspection Reference**

Only an authorised technician who has been trained by Fly & more Handels GmbH ICARO paragliders is authorised to sign and date the glider certification label and sign the manual.



## VI. Terms of the guarantee

The Fly & more Handels GmbH ICARO paragliders guarantees the proper processing, an operation within the allowable limits of proper operation and the fulfillment of the eligibility criteria of glider / harness / rescue equipment at the time of first delivery by the Fly & more Handels GmbH ICARO paragliders.

### ***What is covered by the guarantee?***

Provided that Fly & more GmbH accept the fault the guarantee contains all necessary spare parts related to the replacement or repair of defective parts and working time.

### ***How long is the guarantee?***

**Paragliders:** OXYGEN, GTO, NIKITA, INSTINCT 2 ACRO:

150 flight hours, maximum for a period of two years

***All other certified gliders:***

300 flight hours maximum for a period of three years

**Harnesses and Rescue systems:** 3 years.

**This period applies from registered year of construction.**

### ***What are the conditions of the guarantee?***

- Fly & Handels GmbH needs to be informed immediately after the discovery of a defect and the defective product must be sent to us for testing.
- The glider / the harness was used in normal circumstances and maintained according to the instructions. This includes in particular the careful drying, cleaning and storage.
- The glider / the harness was used only within the applicable guidelines and all rules have been complied with all times.
- All flights must be accounted for within the flight book.
- There were only original spare parts used and checks, exchange and / or repairs were conducted by an authorized dealer or by Fly & more Handels GmbH ICARO paragliders company / person and properly documented.
- A fully and correctly completed guarantee card must be sent at least 6 weeks after buying the glider to Fly & more GmbH commercial. Alternatively can this be sent via the appropriate online form [www.icaro-paragliders.com](http://www.icaro-paragliders.com).
- Fly & more Handels GmbH ICARO paragliders does not accept any responsibility or replacement of the above obligation. However, there is the possibility that there will be a sign of goodwill.

### ***What is excluded from this guarantee?***

- Gliders and Harnesses that are used for training purposes, Acro or other official competitions,
- Gliders / Harnesses who were involved in an accident,
- Rescue equipment, which has been thrown for a emergency,



- Gliders / harnesses and rescue equipment, which have been changed by yourself,
- Gliders / harnesses and rescue equipment that were not purchased from an authorized dealer / flight school,
- Gliders / harnesses and rescue equipment where the required inspection intervals were not met and the verification of the glider was not conducted by a Fly & more Handels GmbH ICARO paragliders authorized operation / person
- Damage which has occurred due to improper treatment (i.e. storage in humidity, heat or direct sunlight)
- Parts that need to be replaced due to normal wear and tear,
- Discoloration of the cloth material used,
- Damage caused by solvents, salt water, insects, sun, sand, humidity or "debag-jumps".
- Damage caused by force majeure.

#### ***How can I claim guarantee?***

In order to claim a guarantee Fly & Handels GmbH ICARO paragliders needs to be informed immediately after the discovery of a defect and the defective product returned for inspection.

Fly & more Handels GmbH ICARO paragliders accept no freight costs (outbound and return transportation).

### **VII. Environmental aspects**

The materials of which a paraglider is made require a special waste disposal. So please send disused gliders back to us. We will care about a professional waste disposal without costing for you.

### **VIII. Attitude and behavior towards nature**

Actually its self-evident, but nevertheless we would like to mention particularly:

- Please do our nature-near sport in a way which doesn't stress nature and environment!
- Please don't walk beside the marked ways, don't leave your litter, don't make unnecessary loud noises and respect the sensitive balance in the mountains.
- Especially at the take-off we have to take care for the nature!

**\*\*Especially at the launch site consideration is needed! \*\***



## IX. Last but not Least

---

Again, we would like to congratulate you on the purchase of your **MAVERICK 2!**

Team ICARO thank you for your trust in our brand and should you have any questions, ideas or criticisms, please contact us.

This paraglider has been developed and produced by modern technology and will give you years of pleasurable and unforgettable flight experiences.

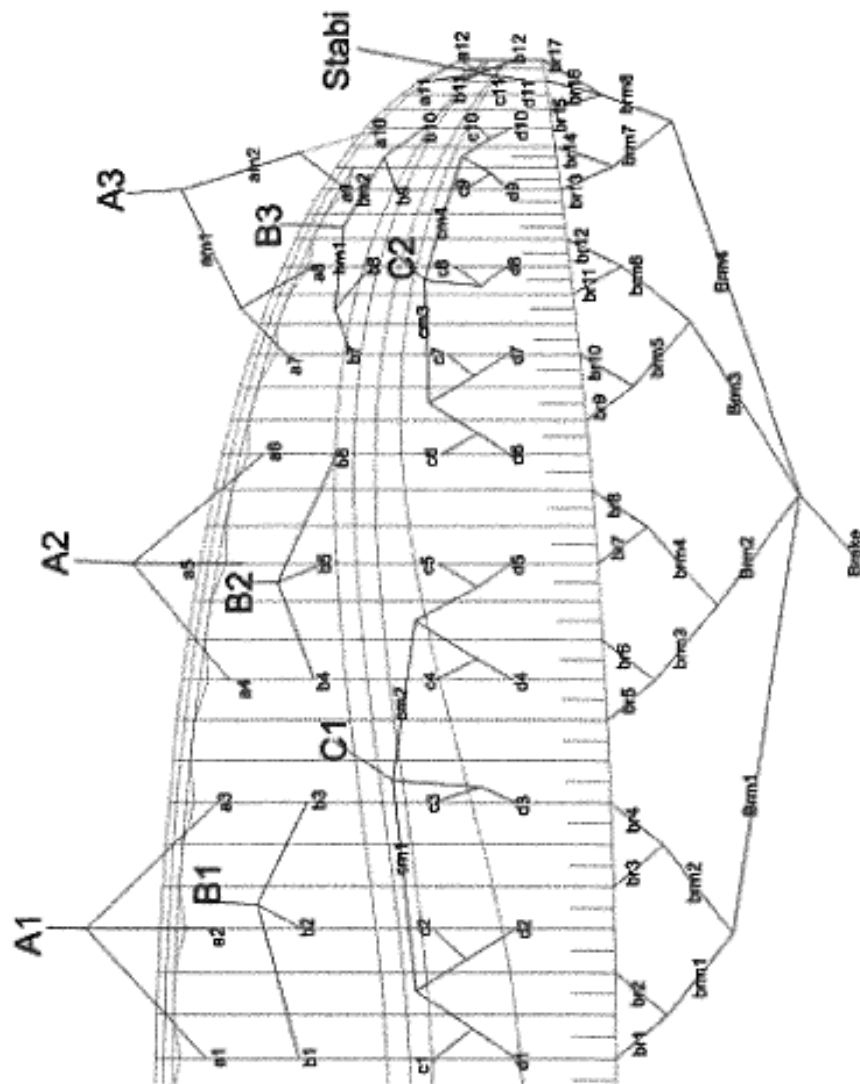
This paraglider will not protect you from the dangers of rash flight manoeuvres and weather changes.

**Your ICARO-Team**

**Fly & more Handels GmbH ICARO paragliders**  
**Hochriesstraße 1, 83126 Flinsbach, Germany**  
Telephone: +49-(0) 8034-909 700 Fax: +49-(0) 8034-909 701  
Email: [office@icaro-wings.com](mailto:office@icaro-wings.com) Web: <http://www.icaro-paragliders.com>



## LINEPLAN



### Dispatch protocol/ Delivery content

|                        |                          |
|------------------------|--------------------------|
| Piece check complete   | <input type="checkbox"/> |
| Inner bag              | <input type="checkbox"/> |
| Compression band       | <input type="checkbox"/> |
| Speed system           | <input type="checkbox"/> |
| Outer rucksack         | <input type="checkbox"/> |
| Operating instructions | <input type="checkbox"/> |
| Customer questionnaire | <input type="checkbox"/> |
| Repair set             | <input type="checkbox"/> |
| T- Shirt               | <input type="checkbox"/> |
| Sticker                | <input type="checkbox"/> |

.....  
Date

.....  
Signature

## 5.2 Appendix B – Temporary Membership Application

THE SOUTH AFRICAN HANG GLIDING & PARAGLIDING ASSOCIATION  
Incorporating Powered Paragliding and Powered Hang Gliding

P O Box 4475 HALFWAY HOUSE 1685. TEL/FAX (012) 668-1219  
E-mail: sahpa@paragliding.co.za



### Temporary Membership Application: Visiting Pilot (Valid: 3 calendar months from date of issue)

|          |                          |                                       |                                                 |                                    |
|----------|--------------------------|---------------------------------------|-------------------------------------------------|------------------------------------|
| <b>A</b> | <b>Type of Activity:</b> | <input type="checkbox"/> Hang Gliding | <input checked="" type="checkbox"/> Paragliding | <input type="checkbox"/> PPG / PHG |
|----------|--------------------------|---------------------------------------|-------------------------------------------------|------------------------------------|

|          |                      |                                                               |
|----------|----------------------|---------------------------------------------------------------|
| <b>B</b> | <b>Pilot Details</b> | <b>Temp. Membership # (to be obtained from SAHPA Office):</b> |
|----------|----------------------|---------------------------------------------------------------|

Surname: J. J.  
First Name: Frank  
Passport #: 254804190 Postal Address: Fichtestraße 14  
Country: Germany Post Code: 10967  
Date of Birth: 30.05.1962 e-mail: frank-hj@web.de (Fax):  
Tel: (w) (h) (Cell): +49 15 25 40 18361

|          |                    |
|----------|--------------------|
| <b>C</b> | <b>Declaration</b> |
|----------|--------------------|

I agree to observe and abide by the SAHPA Constitution and current Rules and Regulations, site rules, and all air space restraints.  
I do not suffer from:  
Diabetes Mellitus, Epilepsy, Narcolepsy, sudden attacks of fainting or giddiness, any mental disorder referred to in sections 3(1) & (2) of the Mental Disorders Act, 1916, addiction to any drug having a narcotic effect, or any disease, defect or disability (including excessive eyesight deficiency) likely to render me incapable of controlling a hang-glider or paraglider without endangering public safety.  
Should I suffer from any illness or condition that could invalidate this medical declaration, a medical certificate from a medical practitioner stating my fitness for participating in my sports will be presented.

→ Pilot's Signature: [Signature] Date: 8.01.2013 ←

|          |                |                                                                                                |
|----------|----------------|------------------------------------------------------------------------------------------------|
| <b>D</b> | <b>Licence</b> | <b>NB: This Section to be completed by Club Licensing &amp; Safety Officers or Instructors</b> |
|----------|----------------|------------------------------------------------------------------------------------------------|

Attach copy of valid licence from country of origin and any other documentation available, including copy of logbook if possible. It may be necessary for Sports Licence equivalent applications to have written and passed the Sports Licence test (attach test paper). See notes on reverse.

This pilot has fulfilled all the necessary requirements in accordance with existing rules to qualify for the following equivalent licence to be issued

Pilot's current Licence Grade: Paragliding Number: 44572 Expiry Date:  
Country of origin: Germany  
Equivalent Grade to be issued: Sports Licence test written and passed: 2.11.2006  
Issuing L&S Officer or Instructor's Name: N/A  
Licence Number: N/A Signature: [Signature]

|                                     |                |              |
|-------------------------------------|----------------|--------------|
| <b>For Office Use Only</b>          |                |              |
| Membership Validity: (Three Months) | Date of issue: | Expiry Date: |
| Payment (R310) received on (Date):  |                |              |

|                                                                                                                                     |                                             |
|-------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------|
| Remove this Portion and hand to Pilot                                                                                               |                                             |
| <b>Receipt of Payment (R310)</b>                                                                                                    | <b>[Radio Call-sign: ZRF 8742]</b>          |
| This Receipt to be retained by Visiting Pilot as proof of valid SAHPA Licence, Casevite access- and 3 <sup>rd</sup> Party Insurance |                                             |
| Pilot Name:                                                                                                                         |                                             |
| Date Paid:                                                                                                                          | Licence grade: Temporary Membership Number: |
| Received By: Name:                                                                                                                  | Signed: SAHPA Licence #:                    |



**NB: SAHPA will only cover emergency evacuation (CASEVAC) if there is no other insurance covering this while the pilot is in South Africa.**

Pilot name: T.M. PLANK

**Mobile Phone Number in SA :**  
**Addresses while travelling in Southern Africa**

Planned itinerary of travel:

Places of Accommodation (including address & telephone):

- (1) .....
- (2) .....
- (3) .....

**Contact Person(s) in South Africa**

Name: Leahlin Röpke Tel: +27 9 177 49 103 19

Name: ..... Tel: .....

**Contacts in Home Country**

Name: ..... Relationship: .....

Tel: .....

Name: ..... Relationship: .....

Tel: .....

**Sports Cover Insurance (if applicable)(attach copies)**

Company: .....

Broker: .....

Telephone Number: ..... Fax #: .....

Policy / Contract Number: .....

**Glider Details**

Manufacturer: ..... Model: ..... Size: .....

Colour(s): .....

Markings: .....

**NOTES:**

1. The issuing officer must obtain a temporary membership number from the SAHPA Office (can be obtained in advance).
2. The fees must be deposited with SAHPA within 7 days. SAHPA Bank details: Standard Bank, Midrand. A/c 202-489-350, branch code 00-11-55.
3. A copy of a valid licence from the country of origin must be attached. Other supporting documents will be welcome.
4. The foreign licence MUST be valid for full period of stay in South Africa.
5. Very experienced pilots from countries that do not have a two or more tier licensing system, will be required to write the Sports Licence theory test to obtain the South African Sports Licence equivalent rating. Test must be submitted to SAHPA Office.
6. A SAHPA Instructor or Safety & Licensing Officer must complete section D.
7. In Section B, please use postal address in home country for delivery of SAHPA Newsletters.
8. Complete reverse of form, and give contact details while in South Africa.
9. This Temporary licence includes the Radio Users Licence as issued by the Dept. of Telecommunications Call-sign: ZRF 874 2

SAHPA Contact Details: Telephone (012) 668-1219 e-mail [sahpa@paragliding.co.za](mailto:sahpa@paragliding.co.za)

SAHPA Radio Frequencies: 141.600 MHz and 141.625 MHz

**Emergency: 082 - 911**



## AIRCRAFT ACCIDENT REPORT

**Name of Owner/Operator** : Pilot : FRANK TILL (German national)  
**Manufacturer** : Icaro  
**Model** : Maveric 3  
**Nationality** : German  
**Registration Marks** : Red, white and purple  
**Place** : Intersection: Alexandra Avenue/Kloof Road,  
 Fresnaye – Cape Town  
  
**Date** : 9 January 2013  
**Time** : 1221Z

*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 Regulation (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 given without prejudice to the rights of the CAA, which are reserved.*

### 1. FACTUAL INFORMATION

On Thursday 10 January 2013 at about 1230Z emergency services were notified of a paraglider crash at the intersection of Kloof Road and Avenue Alexendra, Fresnaye, Cape Town. Numerous other paragliders were still airborne near Lion's Head and no other pilots experienced difficulty, although none of them mirrored the flight path of the deceased.

First responders to the crash site found a white middle aged male attached to a paraglider lying on the public sidewalk in obvious respiratory trauma and not able to communicate.

First aid rendered on scene by paramedics and ambulance personnel could not prevent the person succumbing to compound trauma and respiratory difficulty and he died on scene at approximately 1245Z 10 January 2013.

SAPS closed off the crash site to the public and restricted access to essential personnel only until the SAPS photographer and SAPS Pathologists completed all functions and uplifted the deceased from the scene.

SAHPA Chairman, Wayne Heuer and SAHPA National Paragliding Representative, Anthony Allen attended the scene and introduced themselves to SAPS Detective Colonel Roux who granted them investigative access only after CAA had verified their credentials.

Heuer and Allen were shown the deceased's paraglider and equipment in the back of a SAPS van on scene after it was established that this had already been cut free from the deceased by rescue personnel before they (Heuer and Allen) had arrived on scene.

They found the paraglider main canopy lines to have been cut to create working space for the rescue personnel and tear damage evident on the paraglider upper wing surface, most likely as a result of collision/impact (since the paraglider would not have been able to fly with the apparent damage).

The Harness had impact marks evident as well as a reserve parachute still in its deployment container, but with the first stage handle and dual retention pins free of the normal Velcro mounting position on the outside right side of the harness (it is not yet known if the deceased was left or right handed).

Crash site location and impact point are within a 7m radius (limited to line length of paraglider).

GPS position:  
S 33°55'31.51"  
E 18°22'58.24"

## 1.1 History of Flight

The deceased (Frank Till) a German licenced pilot undertook a solo paragliding flight from the lower launch site at Lions Head in Cape Town on Thursday 10 January at about 1200Z. He and his girlfriend, Kathrin ?..... had completed their SAHPA temporary membership forms and payment for same on the 8 January 2013 with SAHPA TFI rated pilot, Stef Junker (when interviewed post accident by Wayne Heuer, Stef Junker stated he had impressed upon the deceased not to fly without a comprehensive site briefing first).

This flight was allegedly conducted in the correct wind direction and strength that enabled soaring to be achieved on the Clifton facing side of Lions Head (numerous other local and visiting pilots were flying before, during and after this accident), although the investigative team of Wayne Heuer and Anthony Allen cannot verify that the deceased had a comprehensive pre-flight briefing.

The prevailing conditions generated a favourable lift band in the divergence area windward of Lions Head as well as established (well known) areas of VENTURI on the South (towards Kloofnek) and the North (right side facing Bantry Bay) sides of Lions Head, where the wind accelerates in laminar flow before resulting in severe turbulence as it disperses downward over the lee side slopes of Lions Head and Signal Hill.

It is known that the pilot soared and gained some altitude above the launch site, although his flight instrument 3-D tracklog may be recoverable, dependant on impact damage.

He allegedly remained soaring for a while and then ventured to far to the right (northern extremity of lift band in line with the trig beacon on top of Lion's Head and the northern tip of Clifton first beach) below the pinnacle of Lions Head and was caught in the venturi (area of exaggerated wind strength, usually of a laminar nature) that resulted in him encountering wind strength faster than his forward speed and he was flying backwards into the lee side of Lions Head, overhead Fresnaye.

The deceased then reportedly attempted to hold his position into wind and probably made use of his speed bar (operated manually by pushing forward on a cable system using his feet), this resulted in him sinking lower into the turbulence (lee side rotor) and may have caused his wing to enter a severe turbulence-induced uncontrolled spiral dive which ended when he impacted with a building on the lee side of Lions Head on the corner of Avenue Alexandra and Kloof Road, Fresnaye.

Glider wing and line damage is consistent with witness reports that the wing caught or hooked onto the home into which he crashed, thus exaggerating the impact.

Other witnesses on the launch site report the deceased to have been in a normal frame of mind doing standard pre-flight checks and not seeming to be of a suicidal nature.

## 1.2 Injuries to Persons

| Injuries   | Pilot      | Crew | Pass. | Other |
|------------|------------|------|-------|-------|
| Fatal      | Frank Till | N/A  | N/A   | N/A   |
| Serious    | N/A        | N/A  | N/A   | N/A   |
| Minor/None | N/A        | N/A  | N/A   | N/A   |

## 1.3 Damage to Aircraft

Personal Injury: Paraglider equipment is designed to be light and flexible and harnesses do offer some protection from low level impact but overall the equipment in this accident was unable to be of any use in the prevention of personal injury that resulted in the death of Frank Till (the pilot). See pathologist report from SAPA.

Damages due to ground impact: The paraglider canopy and the pilots harness was inspected by Anthony Allen (SAHPA National Paragliding Representative) and Wayne Heuer (SAHPA Chairman) on the Thursday, 10 January 2013 on scene and again at Sea Point SAPS on Friday 11 January 2013. Findings are listed as follows:

Damages to paraglider and equipment: An inspection of the pilot harness gave no indication of equipment failure on its part leading to the cause of the accident. All accessories were connected properly and appeared to be in good working order.

The rescue (reserve) parachute was intact in its container and had not been deployed.

The harness was damaged upon impact indicating the direction of travel and orientation of the pilot at the point of impact. The harness is an approved model manufactured by Independence and incorporated an airbag compartment that offered some low level protection to the pilot when making a normal but hard landing.

The airbag container had burst open on the left side along the seam creating a 60cm open hole resulting from the impact at impact point.

Diagonal striations on the base of the airbag indicate possible direction of travel at the point of impact.

The paraglider wing was cut away by the medics who first attended the scene and it was not possible to inspect the lines for failure. However, the conditions of the wing material and lines attached **do not indicate any failure** on their part attributable to the accident.

The canopy had obvious signs of impact damage that confirms that the pilot was facing down and forwards when he impacted and most likely in an uncontrolled spiral dive. This is supported by the damage to the harness and eyewitness accounts.

The paraglider wing an unmodified standard **Icaro Maverick 2 M** is an EN Standards class C and is designed for intermediate and XC pilots (of the deceased's German license grade).

It had burst two cells (cells 5 and 8 counted outwards from the centre label) on the lower surface a meter apart and off centre from the centre and on the leading to the left.

This damage is typically from the open (leading) edge coming into contact with the ground and air being compressed under huge pressure and bursting rib stitching.

This is supported by the eyewitness accounts.

#### 1.4 Other Damage

Third party property damage has occurred to the house into which the pilot had collided and is subject to an insurance claim – entry façade and pedestrian wrought iron gate on Alexandra Avenue.

At the scene it was not possible to inspect scene due to police preventing access. However, obvious indicators were observed from a short distance away. The pilot was most likely in a spiral dive before the point of impact and it is assumed that the canopy collided first with the a fixed object (wall or banana tree) then the wing may have snagged the wall parapet close to the main entrance.

In this flight attitude, catching the wing on any physical object would cause the pilot to accelerate as a result of the pendular moment and centripetal force, leading to very high translational speed and high energy.

This in turn lead to the deceased impacting with his body on the front metal door and entrance façade leading to the street.

This impact was of such force it broke two welded bars from the decorative gate and bent the metal in towards the house, away from the street.

The pilot came to rest on the sidewalk immediately in front of the decorative security gate and was found with rapidly deteriorating vital signs by the first responders to the scene.

The deceased succumbed to compound injuries on scene and the first aiders were not in a position to resuscitate or stabilise the deceased in time.

#### 1.5 Personnel Information

|                     |                                   |               |            |
|---------------------|-----------------------------------|---------------|------------|
| Nationality         | German National                   |               |            |
| Licence No          | Gender                            | Male          | Age 50     |
| Licence valid       |                                   | Type Endorsed | Paraglider |
| Ratings             |                                   |               |            |
| Medical Expiry Date |                                   |               |            |
| Restrictions        |                                   |               |            |
| Previous Accidents  | Unknown (awaited from German DHV) |               |            |

## Flying Experience :

|                            |   |
|----------------------------|---|
| Total Hours                | ? |
| Total Past 90 Days         | ? |
| Total on Type Past 90 Days | ? |
| Total on Type              | ? |
| Total number of flights    | ? |

Documents/data not received as at 21 February 2013:

1. DHV (German) licensing records, Frank Till.
2. DHV pilot log, Frank Till.
3. GPS track log (requested by A Allen and Wayne Heuer, not submitted as promised).
4. Pathology report ex SAPS (to ascertain pilot weight all up vs. weight rating of wing)

**1.6 Aircraft Information****Airframe Paraglider:**

|              |                           |
|--------------|---------------------------|
| Type         | Paraglider                |
| Manufacturer | Icaro Maverick 2 (medium) |

**1.7 Meteorological Information**

|                |              |             |                 |            |       |
|----------------|--------------|-------------|-----------------|------------|-------|
| Wind direction | South West   | Wind speed  | 12kph to 50 kph | Visibility | Clear |
| Temperature    | 27 degrees C | Cloud cover | Nil             | Cloud base | Nil   |
| Dew point      | 15 degrees C |             |                 |            |       |

**1.8 Take-off area Information**

SAHPA registered Paraglider mountain launch (not an aerodrome)

|                        |                             |
|------------------------|-----------------------------|
| Aerodrome Location     | Lions Head (lower site)     |
| Aerodrome Co-ordinates | 33°56'17.74"S 18°23'17.82"E |
| Aerodrome Elevation    | 1380ft ASL                  |

**1.9 Wreckage and Impact Information**



Crash scene and body of the deceased in the position he came to rest post impact with the entrance façade and gate. The paraglider canopy had lain to the right on the sidewalk marked with an unknown white powder, directly below the candy tape shadow casting a vertical line on the wall (paraglider and harness cut off by responders and placed in SAPS van on scene).

#### **1.10 Medical and Pathological Information**

Nil received by 21 February 2013

#### **1.11 Survival Aspects**

Reserve parachute - if deployed in time - MAY have prevented this fatality, although injury would still have been highly likely due to the lee side rotor and resulting bad turbulence in sinking air.

**1.12 Tests and Research.**

None

**1.13 Organisational Information**

**1.14 Additional Information**

**1.15 ANALYSIS**

**1.15.1 TRAINING**

Allegedly a licensed German paraglider pilot. No confirmation ex DHV although deceased did record a license number on SAHPA temporary form.

**1.15.2 EXPERIENCE**

Not verified

**1.15.3 AIRCRAFT**

As per images and serial number

A Standard paraglider as per specs of MEDIUM below:

**MAVERICK 2.2 - TECHNICAL SPECIFICATION**

Further, faster, higher the MAVERICK 2.2 based clearly is forerunner. It combines excellent glide and climb performance with a high safety lot in the air. It comes in three sizes: S, M and L, from 75 - 130 kg.



| MAVERICK 2.2            |                | S       | M        | L         |
|-------------------------|----------------|---------|----------|-----------|
| Area Flat               | m <sup>2</sup> | 24.48   | 27.10    | 29.68     |
| Area projected          | m <sup>2</sup> | 20.24   | 22.42    | 24.72     |
| Span flat               | m              | 12.11   | 12.81    | 13.45     |
| Span projected          | m              | 10.07   | 10.60    | 11.13     |
| Aspect ratio            |                | 6.58    | 6.58     | 6.06      |
| Aspect ratio projected  |                | 5.01    | 5.01     | 5.01      |
| Cells                   |                | 87      | 87       | 87        |
| Take off weight min-max | kg             | 75 - 95 | 95 - 110 | 105 - 130 |
| V trim                  | km/h           | 38      | 38       | 38        |
| V max                   | km/h           | 57+     | 57+      | 57+       |
| Number of ribs          |                | 3+1     | 3+1      | 3+1       |
| Sticker weight          | kg             | 8.0     | 8.25     | 8.85      |
| Classification          | LTP            | C       | C        | C         |
| Classification          | EN             | C       | C        | C         |

**1.15.4 FATIGUE**

Unknown

**1.16.5 STALL IN A BANK RECOVERY**

Spiral dive at impact (witnessed)

**1.16.1 EQUIPMENT**

See images

**1.16 CONCLUSION****1.16.1 Findings**

Pilot signed paperwork but no other local pilot has come forward to confirm a pre-flight briefing was done on site on the day.

Witnesses state deceased flew into venturi/compression zone and lost forward penetration.

Pilot failed to run downwind once in this position and continued losing height while descending into worse lee side turbulence.  
Witnesses state pilot seemed to lose control in a steep spiral to crash site.

#### 1.16.2 Probable Cause/s

No local site knowledge  
No on site briefing  
No warning signs on take off site  
No radio to avoid danger once aloft by communicating with local pilots  
Failure to run downwind once forward speed turned negative  
Failure to deploy reserve parachute once in spiral dive close to ground.  
Assumed primary cause: lack of site knowledge and no pre-flight site briefing.

#### 1.17 SAFETY RECOMMENDATIONS

1. No pilot to fly without the proper authority: required by law to be licensed (in country of origin) AND as a SAHPA visiting pilot (or registered student as the case may be) BEFORE going flying.
2. Where visiting pilots cannot provide adequate proof of required skill level for unsupervised solo ops, they should be treated as at least one skill grade lower than they purport and supervised accordingly, until their skills are signed off by a suitable observer or instructor.
3. "Supervised accordingly" should mean: under direct instructor supervision at the accordingly graded site and under radio supervision with a thorough pre-flight brief by said instructor.
4. SAHPA should provide a small printed information booklet at a nominal cost which should include key site information, clubs and contacts (unsupervised "visitor flights" must be strongly discouraged).
5. TMNP (Table Mountain National Park) and the Glen Paragliding Club (paragliding club with jurisdiction) should jointly erect safety information signs at launch sites (sign at base of mountain inadequate).
6. GPC has since ruled that although site grade for Lion's Head is BASIC license, the new rating for ALL visiting pilots must be IPPI 5 level (Sports or higher) for solo flights + local pilot briefing.
7. Any less qualified visiting pilots to have an instructor present, other "marker pilots" airborne as indicators and a SAHPA channel functional two-way radio

## 1.18 APPENDICES

Launch witness report, Jan de Jager (SAHPA TFI):

Hi Ant,

Here is my statement as in regard the deceased Frank Till.

On the 10th of January 2013, I walked up Lions head. Once I arrived at the bottom take off. I saw a pilot a few meters away from take off busy preparing his glider.

He was a tall and had a shaven head or very short hair. I can see that he was really taking his time in preparing, checking each line, so he did not seem to be in any hurry to take off.

The guy was talking to a young lady that seemed to be his companion. My initial thought was that he must be part of a larger German group of visiting pilots who have been flying there during the day.

As it was obvious that the pilot was taking his time and no intention to take off. I prepared my tandem glider and passenger and so took off. At the time that I was taking off there was no other pilots except for Frank. Once I took off, I gained height by just flying straight towards the landing field.

My passenger was about 90 kilograms and I realized that my ground speed was less, though there was no need to open my trimmers for more speed. Most pilots that I saw flying before, had very slow penetration and took the same flight path.

From take off till we landed was about 10-15 minutes flight. As I was pacing up, Shane who is working for Stef Junker asked me if I knows some think about a pilot who crashed.

I explained to him, that I have not seen any thing and if he is 100% sure as I just flew.

We went up for a second flight and as we parked, I saw the lady "companion of Frank walking down the footpath and reaching the car park.

I then walked up, flew down and when I arrived at my vehicle was told that there is a pilot who crashed for certain and was presumed dead.

As I was looking for my assistant Joanna, I found her under a palm tree sitting with the lady who is the partner of Frank.  
Joanna was taking care of her as no one else did, until Ant Allen's wife arrived.

Kind Regards,

Jan (Rooies) de Jager

Para Taxi Tandem Paragliding Cape Town  
Cape Town, SA

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**Airborne witness: Igor Trodetsky SAHPA TFI pilot**

Hi Anthony,

As I said before, there is not much to say about this sad story.  
When I notice the pilot, he was already on the wrong side on the mountain, but still high enough to turn and go with back wind to the Promenade or...

Instead of that, he was fighting and pushing, to come on the front side of Lioness Had and he was going lower and lower in to the potential problem.

He was not experienced enough and he was not familiar with the mountain, it was what I could see.

He was not lucky either.

Regards  
Igor.

# Independent (non-pilot) bystanders witness report: Alister van Rooyen & Justin Anley

17th January 2013

On the 10th January 2013 at approximately 15:00, myself (Alister James Mitchell van Rooyen) and friend/witness, Justin Anley, was visiting a friend at 2A De Wet Rd Friesdorp.

There was a light South-East breeze resulting in offshore conditions. The victim appeared to be at a lower altitude to the other para-gliders when he attempted to ascend in a spiral formation. However the para glider continued to descend which caught our attention. We then witnessed the tragic accident as his parachute came into contact with the building, inevitably pulling the victim into the side of the house.

This report was written to the best of our knowledge. We hope that this helps. Our hearts go out to the family and loved ones of the victim.

Alister van Rooyen

Justin Anley

Compiled by :

Anthony Allen

Date : 21 February 2013

for Commissioner for Civil Aviation

Investigator-in-charge : .....

Date : .....

Co-Investigator : .....

Date : .....

02/10/13  
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South African Civil Aviation Authority

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