

AIRCRAFT ACCIDENT REPORT AND EXECUTIVE SUMMARY

				Reference:	CA18/2/3/8840	
Aircraft Registration	ZU-BAS	Date of Accident	27 September 2010		Time of Accident	0700Z
Type of Aircraft	Aviatika 890U		Type of Operation	Private		
Pilot-in-command Licence Type	MPL(Microlight)	Age	47		Licence Valid	Yes
Pilot-in-command Flying Experience	Total Flying Hours	473,45			Hours on Type	473,45
Last point of departure	Roodekopjes Farm					
Next point of intended landing	Roodekopjes Farm					
Location of the accident site with reference to easily defined geographical points (GPS readings if possible)						
Private farm at Roodekopjes, 37 km from Brits. GPS coordinates:(S25°23,835 ' E027°36,231 ')						
Meteorological Information	Surface wind: 290°/ 5 kts; Temperature: 24°C; Visibility: Cavok					
Number of people on board	1+0	No. of people injured	0		No. of people killed	1
Synopsis	<p>The pilot-owner, sole occupant of the aircraft, took off from his private farm on a local private flight with the intention of returning to his farm after the flight. On the way back, while the pilot prepared for landing, the aircraft collided with electric power lines. The pilot lost control and hit the ground at high speed. An eyewitness who was working on the farm where the aircraft crashed, mentioned that he saw the aircraft flying at low altitude just before it collided with the power lines. He stated that the aircraft sounded normal, and that nothing suggested that it might be having a problem.</p> <p>Meteorological conditions at the time of the accident were suitable for visual flight, and it was determined that the weather had not contributed to the accident. On-site examination of the wreckage and engine did not disclose any evidence of a pre-existing airframe defect, engine malfunction or system deficiency which could have caused or contributed to the accident. The damage observed was the result of the impact forces of the crash.</p> <p>Although the pilot was familiar with the area he was flying, and knew about the existence of the power lines, it is possible that he might have been distracted and could not see the wires in time to avoid them. After colliding with the wires at high speed, the pilot lost control of the aircraft and was unable to recover from the collision. Ground impact was unavoidable.</p>					
Probable Cause						
Loss of control after colliding with power lines.						
IARC Date				Release Date		



AIRCRAFT ACCIDENT REPORT

Name of Owner/Operator : Smit W.F
Manufacturer : Aviatika
Model : Aviatica 890U
Nationality : South African
Registration Marks : ZU-BAS
Place : Private Farm in Roodekopjes
Date : 27 September 2010
Time : 0700Z

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

1. FACTUAL INFORMATION

1.1 History of Flight

- 1.1.1 On the morning of 27 September 2010 at approximately 0600Z, the owner-pilot of an Aviatika 890U aircraft took off from his private farm in Roodekopjes on a local private flight, with the intention of returning to his farm after the flight. The pilot was the sole occupant of the aircraft.
- 1.1.2 At approximately 0700Z an eyewitness who was working on the farm heard the sound of an aircraft coming from the east. He mentioned that he first identified the aircraft as it was crossing the R511 road to Thabazimbi. At that time it was flying at an altitude approximately 10 metres higher than the height of the power lines running parallel to the R511. The aircraft sounded normal and nothing suggested any problems.
- 1.1.3 A few moments later the witness heard the aircraft collide with the wires, and when he looked up he saw that the aircraft was out of control and just about to hit the ground. The aircraft was moving at high speed and was in a steep nose-down attitude. When the witness arrived at the scene, he discovered that the pilot had sustained serious injuries. The pilot was treated by the emergency services, but passed away on the way to hospital.
- 1.1.4 The accident happened in daylight, at approximately 0700Z, on a private farm in Roodekopjes 37 km outside Brits, at an elevation of 3 231 feet above mean sea level and GPS position S25°23,835' E27°36,231'.

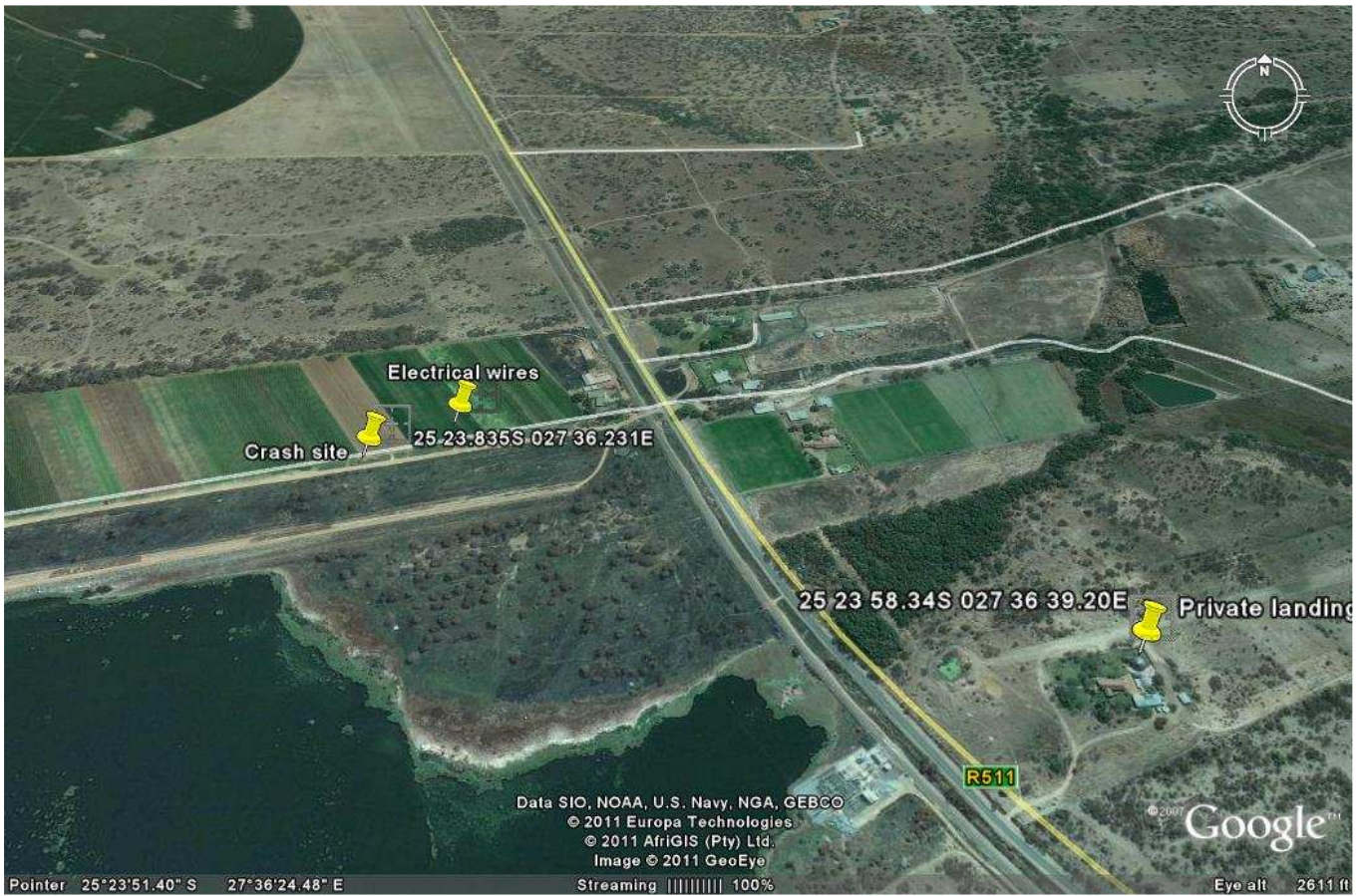


FIGURE 1: Google picture showing the accident site

1.2 Injuries to Persons

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

1.3 Damage to Aircraft

1.3.1 The aircraft was destroyed on impact.



FIGURE 2: Showing damage to the aircraft

1.4 Other Damage

1.4.1 There was no other damage.

1.5 Personnel Information

Nationality	South Africa	Gender	Male	Age	47
Licence Number	*****	Licence Type	MPL		
Licence valid	Yes	Type Endorsed	Yes		
Ratings	None				
Medical Expiry Date	29 January 2012				
Restrictions	None				
Previous Accidents	None				

Flying Experience :

Total Hours	473,45
Total Past 90 Days	Unknown
Total on Type Past 90 Days	Unknown
Total on Type	473,45

NOTE : The pilot's hours were extracted from the pilot's logbook which had last been updated on 10 March 2010. The pilot's flying experience for the past 90 days could therefore not be determined.

1.6 Aircraft Information

Airframe:

Type	Aviatika 890U	
Serial Number	129	
Manufacturer	Aviatika	
Date of Manufacture	6 August 1996	
Total Airframe Hours (At time of Accident)	Unknown	
Last Annual Inspection (Date & Hours)	22 May 2010	448
Hours since Last Annual Inspection	Unknown	
Authority to fly (Issue Date)	6 July 2010	
C of R (Issue Date) (Present owner)	20 November 1996	
Operating Categories	Standard	

Engine :

Type	Rotax 912 UL
Serial Number	440188
Hours since New	Unknown
Hours since Overhaul	TBO not yet reached

Propeller :

Type	Warp Drive
Serial Number	H 6071
Hours since New	Unknown
Hours since Overhaul	TBO not yet reached

NOTE : The airframe, engine and propeller hours were last recorded on 22 May 2010 during the annual inspection; hence, the number of hours at the time of the accident could not be determined accurately.

1.6.1 Weight and balance:

	Weight (kg)
A/C empty weight	286.2
Pilot	84
Fuel main tank	37
TOTAL T/O Weight	407.2

Note: The maximum mass of fuel that this aircraft carries is 37 kilograms. The calculations were based on the assumption that the aircraft had maximum fuel on board.

- With only one occupant, and the amount fuel on board, the aircraft was well below the maximum permissible mass of 450 kg.

1.7 Meteorological Information

The South African Weather Service reported that based on the observations at the two recording stations closest to the accident site (Pretoria and Rustenburg), weather conditions were as follows:

Wind direction	290	Wind speed	5 knots	Visibility	Cavok
Temperature	24°C	Cloud cover	SCT	Cloud base	3500 ft
Dew point	-2°C				

1.8 Aids to Navigation

1.8.1 The aircraft was equipped with standard navigation equipment. All the navigation equipment was serviceable before to the accident.

1.9 Communications.

1.9.1 The communication equipment installed in the aircraft was found to be in accordance with the approved equipment list. There were no defects reported with the communication equipment prior to the accident.

1.10 Aerodrome Information

1.10.1 The accident occurred in a private farm at Roodekopjes, 37 kilometres north of Brits. The GPS position was S25°23,835 ' E027°36,231 ' at an elevation of 3 231 ft.

1.11 Flight Recorders

1.11.1 The aircraft was not fitted with a Flight Data Recorder (FDR) or a Cockpit Voice Recorder (CVR), nor were they required by regulation.

1.12 Wreckage and Impact Information

1.12.1 The accident site was a level maize field on a private farm in Roodekopjes. The aircraft hit the power lines with the right wing and lost control. After hitting the wires, the aircraft moved approximately 100 metres before crashing to the ground in a steep nose-down attitude and coming to rest in an inverted position. Pieces of the right wing structure and wing fabric were found underneath the electrical wires. The aircraft had been heading west on impact.

1.12.2 All parts and control surfaces were accounted for on the site. Although flight control cable runs were disrupted by the impact forces, pre-impact control integrity was easily established. The extent of the damage to the aircraft indicated that the aircraft struck the ground at high speed and in a steep nose-down attitude. The wreckage was contained within a three-metre radius of the final impact point, except for the piece of the wing which was found 100 metres away beneath the power lines.



FIGURE 3: Showing the wreckage site.

1.13 Medical and Pathological Information

1.13.1 Postmortem results revealed that the pilot had died from multiple injuries associated with the crash.

1.13.2 The results of the toxicology tests were not available at the time that this report was compiled. If any results are received later indicating that medical aspects may have affected the performance of the pilot, this will be considered as new evidence and the investigation will be reopened.

1.14 Fire

1.14.1 There was no evidence of a pre- or post-impact fire.

1.15 Survival Aspects

1.15.1 Because the cockpit/cabin area took the full force of the crash, this accident was not survivable.

1.16 Tests and Research

1.16.1 On-site Examination

- (i) On-site inspection of the wreckage revealed that all structural damage was consistent with the impact. Nothing was found to suggest that there had been any pre-impact failure of the primary structure.
- (ii) The fuel tank had been ruptured, and damage to the vegetation at the impact site indicated a significant amount of fuel spillage.
- (iii) The carburettor float bowls were found to contain fuel. No water or sediment contamination was observed in the float bowls.
- (iv) The engine was examined and considered to have been capable of running at the time of the accident; further engine tests were not conducted.

1.17 Organizational and Management Information

1.17.1 This was a private flight, and the aircraft was privately owned.

1.18 Additional Information

(Information extracted from a research report by the ATSB called Wire Strike Accident in General Aviation: Data Analysis 1994 to 2004)

1.18.1 Wire strike hazards

Wire strikes generally occur when an aircraft is operating in close proximity to the ground, including the landing and take-off phases of flight. However, on occasion, wire strikes have occurred over water where a wire is strung between two high points.

Low flying is hazardous because of the aircraft's close proximity to obstructions such as trees, power lines, buildings and radio towers. Colliding with obstructions such as these can cause significant damage to an aircraft, resulting in loss of control and subsequent impact with the ground or water. Impact forces will likely involve further aircraft damage and possibly injury or death to aircraft occupants.

In addition to obstructions, there are several other factors that may elevate the risk of low-level flying. Of significance is the relatively short distance between the aircraft and the ground, which reduces and in some cases removes the options for a pilot to manoeuvre to avoid a collision or recover from a loss of control.

1.18.2 Pilot Distraction

According to the Aerial Application Pilots' Manual, it is easy for a pilot to forget about the wire, without some positive reminder of its presence. This is especially true if a distraction occurs at the critical moment when the pilot should be thinking about initiating the pull-up.

There are a number of factors that cause pilot distraction. These include deteriorating weather conditions, personal stress, objects on ground, radio calls,

equipment malfunctions and passengers. A recent aviation research investigation report published by the ATSB suggests that pilot distractions can be broadly classified into four different groups including:

- **Visual distraction** – looking at the spraying area, or particularly eye-catching scenery.
- **Auditory distraction** – radio or mobile phone.
- **Biomechanical (physical) distraction** – manipulating a control.
- **Cognitive distraction** – being ‘lost in thought’ or engrossed in the task.

Each of these types of distraction, either singularly or in combination, can take a pilot’s attention away from the task of flying.

1.19 Useful or Effective Investigation Techniques

1.19.1 None.

2. ANALYSIS

- 2.1 The pilot-owner, sole occupant of the aircraft, took off from his private farm on a local private flight with an intention of returning to his farm after the flight. On his way back, while preparing for landing, the aircraft collided with power lines. The pilot lost control and the aircraft hit the ground at high speed.
- 2.2 An eyewitness who was working on the farm where the aircraft crashed, mentioned that he saw the aircraft flying at low altitude just before it collided with the power lines. He stated that the aircraft sounded normal; nothing suggested that it might be having a problem.
- 2.2 Meteorological conditions at the time of the accident were suitable for visual flight, and it was determined that weather did not contribute to the accident.
- 2.3 On-site examination of the wreckage and engine did not disclose any evidence of a pre-existing airframe defect, engine malfunction or system deficiency which could have caused or contributed to the accident. All the damage observed were the result of impact forces caused by the crash.
- 2.4 Although the pilot was familiar with the area in which he was flying, and knew about the existence of the power lines, it is possible that he might have been distracted and could not see the wires in time to avoid them. After colliding with the wires at high speed, the pilot lost control and was unable to recover. Crashing to the ground impact was unavoidable.

3. CONCLUSION

3.1 Findings

- 3.1.1 The pilot held a microlight pilot’s license, and was endorsed to fly the aircraft type.

- 3.1.2 The pilot had a valid aviation medical certificate.
- 3.1.3 The aircraft had a valid Authority to Fly at the time of the accident.
- 3.1.4 The accident occurred in daylight conditions.
- 3.1.5 Weather conditions were reported to be fine, so weather was not a factor in the accident.
- 3.1.6 The annual inspection was certified by an Approved Person on 22 May 2010 at 448 airframe hours.
- 3.1.7 The aircraft was certified, equipped and maintained in accordance with regulations and approved procedures.
- 3.1.8 There was no evidence of pre-impact failure or malfunction of the aircraft's structure, power plant, flight controls or other systems.
- 3.1.9 The pilot lost control of the aircraft after collision with power lines.

3.2 Probable Cause/s

- 3.2.1 Loss of control after collision with power lines.

4. SAFETY RECOMMENDATIONS

- 4.1 None.

5. APPENDICES

- 5.1 None

Compiled by

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Date:

For: Director of Civil Aviation

Investigator-in-charge:

Date:

Co-Investigator:

Date: