



AIRCRAFT ACCIDENT REPORT AND EXECUTIVE SUMMARY

				Reference:	CA18/2/3/7959	
Aircraft Registration	ZU-ADJ	Date of Accident	13 May 2005	Time of Accident	1250Z	
Type of Aircraft	Windlass Trike (Microlight)		Type of Operation	Private		
Pilot-in-command Licence Type		Microlight	Age	36	Licence Valid	Yes
Pilot-in-command Flying Experience		Total Flying Hours	177.6	Hours on Type	177.6	
Last point of departure		Estcourt Ultra City, KwaZulu-Natal				
Next point of intended landing		Ficksburg Aerodrome. (FAFB)				
Location of the accident site with reference to easily defined geographical points (GPS readings if possible)						
On the R711 tar road between Clarens and Fouriesburg. Geographical position :S 28° 38.665' E 028° 16.738'						
Meteorological Information		The weather was fine with a Westerly Wind at 5kt; Temperature: 14°C; Visibility: CAVOK				
Number of people on board	1+0	No. of people injured	0	No. of people killed	1	
Synopsis						
<p>On 13 May 2005, three microlight pilots planned to fly with three microlight aircraft ZS-CMA, ZU-CDU and ZU-ADJ on a long-distance navigational flight from the Durban Area, encompassing a large part of South Africa. Two microlights departed from La Mercy Aerodrome and landed at Estcourt Ultra City on the first leg of the navigational flight. The third pilot departed from Scottburgh just south of Durban and joined the other two pilots at the Estcourt Ultra City.</p> <p>After the pilots had uplifted 50 litres of fuel into each aircraft's fuel tank, they also uplifted 25 litres of fuel into the fuel containers that were strapped and secured onto the aft seat of the three microlight aircraft at Estcourt Ultra City. They nevertheless did not do proper pre-planning in order to land at a suitable airstrip for refuelling on the route they planned to follow.</p> <p>The pilots discussed the route to follow from Estcourt to Ficksburg and decided to fly over Winterton to Sterkfontein Dam and from there to Clarens en route to Ficksburg.</p> <p>The pilot of the leading microlight, ZS-CMA who is also a microlight flight instructor, stated that as they passed over Golden Gate and Clarens Golf course after a flight of approximately 2 hours, they intended to land somewhere to refuel as they had encountered stronger headwinds than anticipated and the fuel levels in their fuel tanks were becoming low. The endurance with full tanks is approximately 2.50 hours. As there was absolutely nowhere to land safely without risk and landing on the Clarence golf course was not a good option, he decided that the best option was to execute a precautionary landing on the tar road between Clarence and Fouriesburg.</p> <p>The three microlights then followed the R711 road between Clarens and Fouriesburg. The instructor pilot advised the other two microlight pilots who were flying approximately 800ft above ground level, to watch where he was landing on the tar road so that once they have landed, they could turn off the tar road onto a farm gravel road. He also warned them to watch out for high tension wires spanned across the road.</p> <p>The first two microlights, ZS-CMA and ZU-CDU landed safely and turned off onto the gravel road. The third microlight, ZU-ADJ attempted to land on the tar road, approximately 1km behind the first two microlights, but prior to landing, the microlight collided with high tension wires spanned across the road. The microlight then impacted the tar road and burst into flames. The pilot sustained fatal injuries and the aircraft was destroyed by the ensuing fire.</p>						
Probable Cause						
The aircraft collided with high tension wires spanned across the road when the pilot was attempting to execute a precautionary landing on a road after his fuel level became low.						
IARC Date		Release Date				

AIRCRAFT ACCIDENT REPORT

Name of Owner/Operator : Du Bruyn A
Manufacturer : Solo Wings CC
Model : WL 348
Nationality : 1992
Registration Marks : ZU-ADJ
Place : On main road 14km from Fouriesburg.
 S28° 38.665' E028° 16,738'
Date : 13 May 2005
Time : 1250Z

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 interests 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 13 May 2005, three microlight pilots planned to fly with three microlight aircraft, ZS-CMA, ZU-CDU and ZU-ADJ on a long-distance navigational flight from the Durban Area, encompassing a large part of South Africa. Two microlights departed from La Mercy Aerodrome and landed at Estcourt Ultra City on the first leg of the navigational flight. The third pilot departed from Scottburgh, just south of Durban and joined the other two pilots at Estcourt Ultra City.

1.1.2 After the pilots had uplifted 50 litres of fuel into each aircraft's fuel tank, they also uplifted 25 litres additional fuel into fuel containers strapped and secured onto the aft seat of the three microlights at Estcourt. They then discussed the route to follow from Estcourt to Ficksburg and decided to fly overhead Winterton to Sterkfontein Dam and from there to Clarens en route to Ficksburg. They however did not do proper pre-planning in order to land at a suitable airstrip for refuelling on the route they planned to follow.

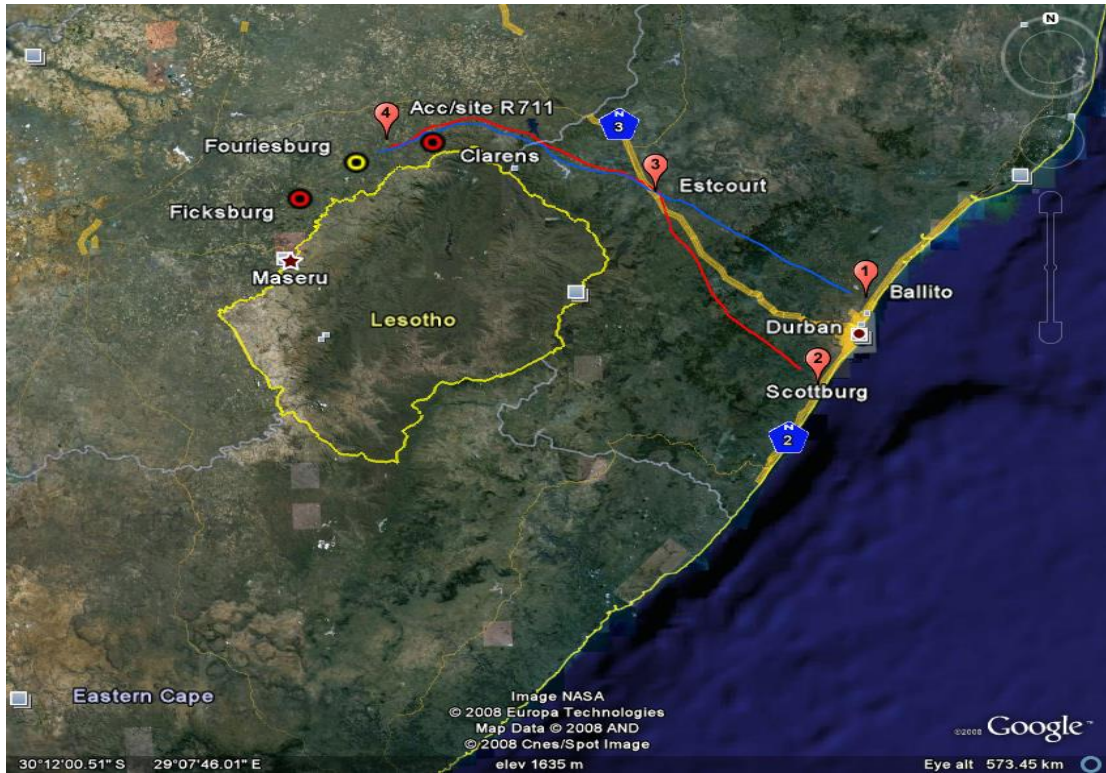


PHOTO1: THE RED LINE ON THE MAP SHOWS THE FLIGHT PATH OF ZU-ADJ FROM SCOTTBURG TO ESTCOURT WHERE HE JOINED THE OTHER 2 MICROLIGHTS THAT FLEW FROM BALLITO TO ESTCOURT (BLUE LINE). THE 3 MICROLIGHTS FLEW TOGETHER TO FICKSBURG WHEN THE ACCIDENT OCCURRED BETWEEN CLARENS & FOURIESBURG.

- 1.1.3 The pilot of the leading microlight, ZS-CMA who is also a microlight flight instructor, stated that as they passed over Golden Gate and Clarens Golf course after a flight of about 2 hours, they intended to land on a private road or suitable landing area to refuel, as they had encountered stronger headwinds than anticipated and that their fuel level in the fuel tanks were becoming low. The endurance with full tanks is approximately 2.50 hours. As there was absolutely nowhere to land safely without risk and landing on the Clarence golf course was not a good option, he decided that the best option was to execute a precautionary landing on the R711 tar road between Clarence and Fouriesburg.
- 1.1.4 The three microlights then followed the road between Clarens and Fouriesburg. The instructor pilot advised the other two microlight pilots who were flying approximately 800ft above ground level, to watch where he was landing on the tar road so that once they have landed, they could turn off from the tar road onto a farm gravel road. He also warned them to watch out for the high tension wires spanned across the road.
- 1.1.5 The first two microlights, ZS-CMA and ZU-CDU landed safely and turned off onto the gravel road. The pilot of the third microlight, ZU-ADJ, attempted to land on the tar road, approximately 1km behind the first two microlights, but prior to the landing, the microlight collided with high tension wires spanned across the road. The microlight then impacted the tar road and burst into flames. The pilot sustained fatal injuries and the aircraft was destroyed by the ensuing fire that erupted.

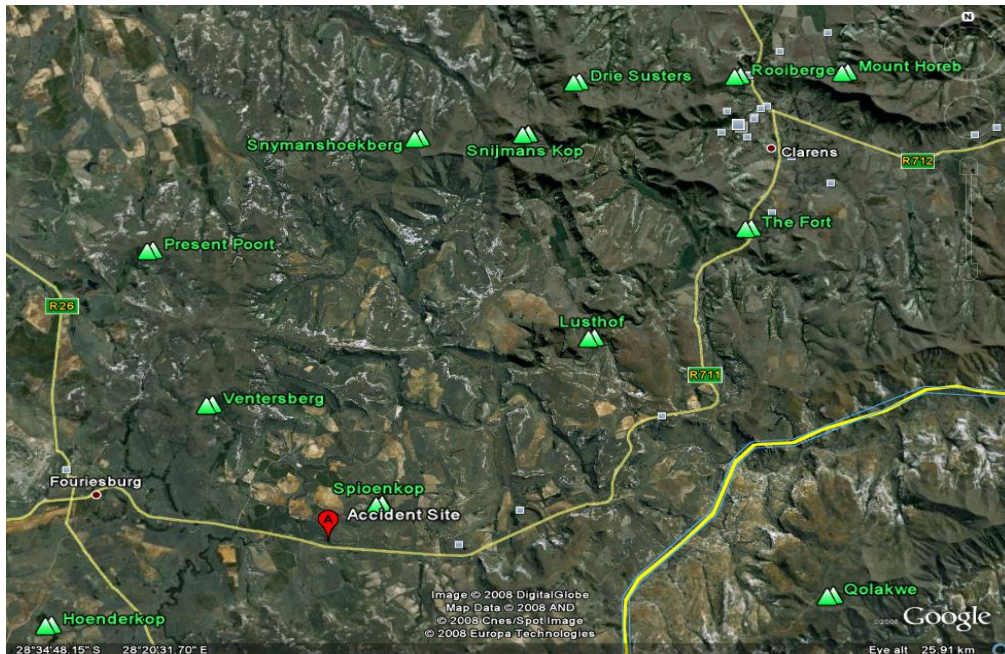


PHOTO 2: THE RED INDICATOR MARKED A ON THE MAP SHOWS WHERE THE ACCIDENT OCCURRED ON THE ROAD NEAR FOURIESBURG.



PHOTO 3 : VIEW OF ROAD THAT WAS USED FOR THE PRECAUTIONARY LANDING

1.2 Injuries to Persons

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

1.3 Damage to Aircraft

1.3.1 The microlight aircraft was destroyed during the ensuing fire after the aircraft collided with high tension wires spanned across the road.



PHOTO 4 : VIEW OF AIRCRAFT WRECKAGE DESTROYED BY ENSUING FIRE

1.4 Other Damage

1.3.1 The high tension wires spanned across the R711 road were severed and the tar road was damaged by the fire that erupted.



PHOTO5 : VIEW OF DAMAGE TO TAR ROAD BY THE ENSUING FIRE

1.5 Personnel Information

Nationality	South African	Gender	Male	Age	36
Licence No.	*****	Licence Type	Microlight		
Licence valid	Yes	Type Endorsed	Yes		
Ratings	None				
Medical Expiry Date	04 October 2005				
Restrictions	None				
Previous Accidents	None				

Flying Experience :

Total Hours	177.6
Total Past 90 Days	22.0
Total on Type Past 90 Days	22.0
Total on Type	177.6

1.5.1 The flying hours at the time of the accident are included in the flying hours above.

1.6 Aircraft Information

Airframe :

Type	Windlass Trike	
Serial Number	WL348	
Manufacturer	Solo Wings CC	
Date of Manufacture	1992	
Certification Status	Non Type Certified Aircraft	
Total Airframe Hours (At time of Accident)	389.16	
Last Annual Inspection (Hours & Date)	363.75	12 November 2004
Hours since Last Annual Inspection	25.41	
Authority to Fly (Issue Date)	08 December 2004	
Authority to Fly (Expiry Date)	07 December 2005	
C of R (Issue Date) (Present owner)	03 August 2001	
Operating Categories	Private as per Authority to Fly	

Engine :

Type	Rotax 503
Serial Number	3987239
Hours since New	389.16
Hours since Overhaul	TBO not reached

Propeller :

Type	NC Propeller 3 bladed
Serial Number	Hub 070
Hours since New	26.0
Hours since Overhaul	TBO not reached

1.6.1 According to the aircraft airframe logbook, the aircraft was properly maintained and in good order.

1.7 Meteorological Information

1.7.1 The South African Weather Services provided the following information on the meteorological weather conditions at the date and time of the accident:

- Surface Analysis:
On 13 May 2005 at 1200Z: A cold front was passing south of the country with a trough of low pressure over the south-eastern part of the interior.
- Upper Air Analysis:
A trough of low pressure was present in the upper air over the South-Western Cape.
- Satellite Imagery:
The satellite imagery shows clear skies in the Fouriesburg area.
- The weather conditions in the vicinity of the accident:
No official weather observations were available at the time and place of the accident. The most likely weather conditions at the place of the accident were as follows:

Time: 12:50Z.
Temperature: 20°C.
Dew Point: 04.0°C
Visibility: 10km+
Wind Direction: 230°
Wind Speed: 07kt.
Cloud: Nil.

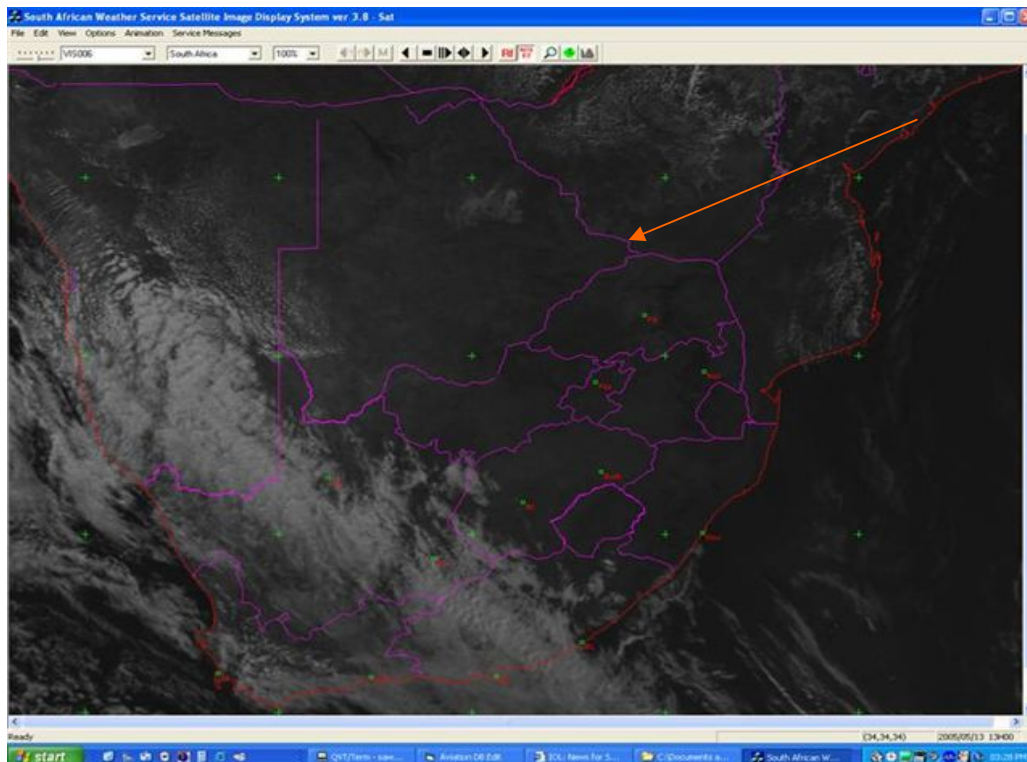


PHOTO 6 : SA WEATHER SERVICES RADAR IMAGE SHOWING CLEAR WEATHER AT ACCIDENT AREA.

1.8 Aids to Navigation

1.8.1 The aircraft was fitted with a compass and the pilot was in possession of a hand-held GPS (Global Positioning System) for navigational purposes.

1.9 Communications

1.9.1 The aircraft was not fitted with a radio but the pilot used a handheld ICOM A20. There was no recorded communication prior to the accident.

1.10 Aerodrome Information

1.10.1 The accident did not occur at an aerodrome but on the R711 road between Clarens and Fouriesburg, approximately 14km from Fouriesburg. The geographical positions were recorded as: S 28°38.665' E 028° 16.738'.

1.11 Flight Recorders

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

1.12 Wreckage and Impact Information

1.12.1 The microlight aircraft collided with high tension wires spanned across the tar road in a direction of 310°. The aircraft then impacted the road surface 28.0 metres from the initial impact with the high tension wires and came to rest 6.5 metres further on. A fire erupted and the aircraft was destroyed by the ensuing fire.

1.13 Medical and Pathological Information

1.13.1 According to the Medico-Legal Post-Mortem Examination Report, the cause of death was due to head injuries and lacerated aorta. The Mechanism of Death was attributed to damaged brain tissue and exsanguinations.

1.13.2 No liquid blood was available from within blood vessels in the charred body in order to conduct a toxicological analysis.

1.14 Fire

1.14.1 A post-impact fire erupted after the impact with the tar road, which subsequently

destroyed the aircraft and set alight an area of grass 200m x 600m, next to the road.

1.15 Survival Aspects

1.15.1 This accident was not survivable, due to the high impact forces with the high tension wires and the road surface, and the post-impact fire that erupted.

1.16 Tests and Research

1.16.1 The burnt wreckage was examined as far as possible. The wing structure was excessively burnt but it could be determined that it was intact on impact with the high tension wires and road surface. All engine components were found partially destroyed by the ensuing fire. The spark plugs were removed and the carbon deposits showed a normal mixture setting.

1.16.2 The remains of the pilot's watch found in the wreckage showed 14h50 (2:50 PM), indicating the local time that the pilot's watch stopped at the time of the accident.

1.17 Organisational and Management Information

1.17.1 The aircraft was privately owned and the owner operated the aircraft in his private capacity. The pilots of the three microlights planned a long distance navigational flight from Durban, encompassing a large part of South Africa.

1.17.2 The last annual inspection was duly certified by an Approved Person No.114 (AP) of the Microlight Association of South Africa (MISASA).

1.18 Additional Information

1.18.2 Fuel and oil supply

According to CAR Chapter 91.07.12 (1); The pilot-in-command of an aircraft shall not commence a flight unless he or she is satisfied that the aircraft carries at least the planned amount of fuel and oil to complete the flight safely, taking into account operating and meteorological conditions and the expected delays.

(2) The pilot-in-command shall ensure that the amount of usable fuel remaining in-flight is not less than the fuel required to proceed to an aerodrome or, in the case of a helicopter, a suitable landing place, where a safe landing can be made.

(3) If the usable fuel on board the aircraft is less than the final reserve fuel, the pilot-in-command of such aircraft, shall –

- (a) in the case of an aeroplane, declare an emergency; or
- (b) in the case of a helicopter, land as soon as possible.

- 1.18.2 According to CAR Chapter 91.06.1; No pilot shall use a public road as a place of landing or take-off in an aircraft, except –
- (a) in the case of an emergency involving the safety of the aircraft or its occupants;
 - (b) for the purpose of saving human lives.

1.19 Useful or Effective Investigation Techniques

- 1.19.1 None was carried out.

2. ANALYSIS

- 2.1 Two microlight pilots departed from La Mercy Aerodrome near Durban with two microlights, ZS-CMA and ZU-CDU and landed at Estcourt Ultra City on the first leg of the planned long-distance navigational flight, encompassing a large part of South Africa. The third pilot with ZU-ADJ departed from Scottburgh just south of Durban, and joined them at Estcourt Ultra City.
- 2.2 After the pilots had uplifted 50 litres of fuel into each aircraft's fuel tank, they also uplifted an additional 25 litres of fuel into fuel containers that were strapped and secured onto the aft seat of the three microlight aircraft at Estcourt Ultra City. The pilots discussed the route to follow from Estcourt to Ficksburg and decided to fly over Winterton to Sterkfontein Dam and from there to Clarens en route to Ficksburg.
- 2.3 The pilot of ZS-CMA who is also a microlight pilot flight instructor, stated that as they passed over Golden Gate and Clarens Golf course, they intended to land somewhere to refuel as the fuel quantity was getting low after they had flown for approximately 2 hours since they had departed from Estcourt Ultra City. The endurance with full tanks is approximately 2.50 hours. As there was absolutely nowhere to perform a precautionary landing safely, and landing on the Clarence golf course was not considered to be a good option, he decided that the only option was to execute a precautionary landing on the tar road between Clarence and Fouriesburg.
- 2.4 The pilot of ZS-CMA then advised the other two microlight pilots whilst they were following the road between Clarens and Fouriesburg, to watch where he was landing on the tar road so that they could turn off the tar road onto a farm gravel road, after landing. He also warned them to watch out for the high tension wires

spanned across the road.

- 2.5 The first two microlights, ZS-CMA and ZU-CDU landed safely and turned off onto the gravel road. The third microlight, ZU-ADJ attempted to land on the tar road, approximately 1km behind the first two microlights, but collided with high tension wires spanned across the road.
- 2.6 Although the pilots planned the long distance navigational flight from the Durban area and carried additional fuel in containers strapped and secured onto the aft seat of the microlights, they did not plan for a suitable landing place, where a safe landing could be made according to Regulation 91 07 12 (1).

3. CONCLUSION

3.1 Findings

- 3.1.1 The pilot of the accident aircraft was the holder of a valid microlight pilot's licence and the aircraft type was endorsed on his licence.
- 3.1.2 The pilot was the owner of the aircraft and operated this aircraft in his private capacity.
- 3.1.3 The pilot of the aircraft that sustained the accident followed the two other microlights on the long-distance navigational flight and also attempted to carry out a precautionary landing on a tar road in order to refuel the aircraft on the ground, when the aircraft impacted high-tension wires spanned across the tar road.
- 3.1.4 According to Regulation 91.06.1; no pilot shall use a public road as a place of landing or take-off in an aircraft, except –
(a) in the case of an emergency involving the safety of the aircraft or its occupants or for the purpose of saving human lives; but:
- 3.1.5 According to available information obtained from the pilot who landed first on the road between Clarens and Fouriesburg, they experienced stronger headwinds than anticipated. As a result, their fuel levels were becoming low and they were looking for a place to land in order to uplift fuel from the containers secured at the aft seat to the aircraft fuel tank.
- 3.1.6 The Authority to Fly for the aircraft was valid at the time of the accident, with the expiry date being 07 December 2005.
- 3.1.7 According to the aircraft airframe logbook, the aircraft was properly maintained and in good order.
- 3.1.8 The last Annual Inspection was carried out by an Approved Person (AP) of MISASA.

3.1.4 There was no evidence of any defects reported prior to the accident.

3.2 Probable Cause/s

3.2.1 The aircraft collided with high tension wires spanned across the road, when the pilot was attempting to execute a precautionary landing on a road after his fuel level became low.

4. SAFETY RECOMMENDATIONS

4.1.1 It is recommended that the Aero Club of South Africa should advise microlight pilots to do proper preplanning prior to long-distance navigational flights, and thus to ensure identified possible suitable landing strips en-route.

4.1.2 It is also recommended that the CCA introduce pre-flight requirements and operational requirements in respect of take off and landing area selection.

5. APPENDICES

5.1 None

-END-

Report reviewed and amended by Advisory Safety Panel

27 January 2009