



AIRCRAFT ACCIDENT REPORT AND EXECUTIVE SUMMARY

				Reference:	CA18/2/3/8747	
Aircraft Registration	ZU-FDC	Date of Accident	02 February 2010	Time of Accident	0600Z	
Type of Aircraft	Windlass Aquilla (Microlight)		Type of Operation	Agricultural		
Pilot-in-command Licence Type		Commercial	Age	38	Licence Valid	Yes
Pilot-in-command Flying Experience		Total Flying Hours	1 715.50		Hours on Type	1 605.10
Last point of Departure		Ballito Microlight Aerodrome, KwaZulu-Natal				
Next point of Intended Landing		Ballito Microlight Aerodrome; KwaZulu-Natal				
Location of the Accident Site with Reference to Easily Defined Geographical Points (GPS readings if possible)						
SAXE Private farm approximately 4 km north-west of Ballito Microlight Aerodrome						
Meteorological Information		Surface Wind: SE/5kt ; Temperature 23°C; Visibility: CAVOK				
Number of People on Board	1 + 0	No. of People Injured	1	No. of People Killed	0	
Synopsis						
<p>On 2 February 2010 at approximately 0600Z, the pilot took off from Ballito Aerodrome with a load of 90 kg of chemicals in order to carry out a crop-spraying operation on a private farm (SAXE) north-west of Ballito Aerodrome.</p> <p>The pilot stated that although he was aware that high-tension wires spanned the bottom end of the field, he was not aware that the high-tension wires branched off, with the second high-tension wire running in a different direction near the end of the field being sprayed. During the spray run, he failed to notice the second high-tension wire and subsequently collided with it. The aircraft then impacted the ground, causing serious injuries to the pilot. The aircraft was substantially damaged during the accident sequence.</p> <p>The pilot sustained fractured ribs and was admitted to the intensive care unit (ICU) in hospital.</p>						
Probable Cause						
The aircraft collided with high-tension wires during a crop-spraying operation.						
IARC Date				Release Date		



AIRCRAFT ACCIDENT REPORT

Name of Owner/Operator : AR Weaver
Manufacturer : Solo Wings CC
Model : Windlass Aquilla
Nationality : South African
Registration Marks : ZU-FDC
Place : Private farm 4 km north-west from Ballito
Date : 2 February 2010
Time : 0600Z

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 two 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 2 February 2010 at approximately 0600Z, the pilot took off from Ballito Aerodrome with a load of 90 kg of chemicals in order to carry out a crop-spraying detail on a private farm (SAXE), north-west of Ballito Aerodrome.
- 1.1.2 The pilot stated that whilst he was busy with the crop-spraying detail on the farm, he was aware of high-tension wires that spanned between wooden poles at one end of the field. However, he was not aware that the high-tension wires branched off, with the second high-tension wire running in a different direction near the end of the field being sprayed.
- 1.1.3 During the spray run, he failed to notice the second high-tension wire and subsequently collided with it. The aircraft then impacted the ground, causing serious injuries to the pilot. The pilot sustained fractured ribs and was admitted to the intensive care unit (ICU) in hospital.

1.2 Injuries to Persons

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

1.3 Damage to Aircraft

1.3.1 The aircraft sustained substantial damage to the landing gear structure, wings and propeller.



Figure 1: The wing, which was recovered to manufacturer



Figure 2 : The propeller blades and frames

1.4 Other Damage

1.4.1 There was no damage caused to the high-tension wires or property on the ground.

1.5 Personnel Information

1.5.1 Pilot-in-command:

Nationality	South African	Gender	Male	Age	38
Licence Valid	Yes	Type Endorsed	Yes		
Ratings	Agriculture, Flight Instructor Grade C				
Medical Issue Date	05/01/2010				
Medical Expiry Date	04/01/2012				
Restrictions	None				
Previous Accidents	None				

1.5.2 Flying Experience:

The aircraft was operated under the auspices of a valid licensed Air Operating Certificate (AOC) holder, no. G197D. in order for the pilot to do crop spraying operations.

Total Hours	1 715.5
Total Past 90 Days	62.0
Total on Type Past 90 Days	62.0
Total on Type	1 605.1

1.6 Aircraft Information

1.6.1 Airframe:

Type	Windlass Aquilla	
Serial Number	WA 1195	
Manufacturer	Solo Wings	
Year of Manufacture	2008	
Aircraft Status	NTCA	
Total Airframe Hours (At Time of Accident)	152.3	
50 Hour Inspection (Hours & Date)	51.5	31 August 2009
Last Annual Inspection (Hours & Date)	03.8	22 December 2009
Hours Since Last Annual Inspection	48.5	
Authority to Fly (Issue Date)	17 June 2009	
Authority to Fly (Expiry Date)	2 June 2010	
C of R (Issue Date) (Present Owner)	25 March 2009	
Operating Categories	Commercial	

1.6.2 Engine:

Type	Rotax 912 ULS
Serial Number	565 0963
Hours Since New	152.3
Hours Since Overhaul	Not reached

1.6.3 Propeller:

Type	Neuform
Serial Number	No number
Hours Since New	152.3
Hours Since Overhaul	Not reached

1.6.4 The aircraft was maintained by an approved person (AP) of the Aero Club of South Africa.

1.6.5 Mass and Balance:

1.6.5.1 The aircraft was configured with aerial spraying equipment.

1.6.5.2 The empty mass was calculated as 241.5 kg and the maximum allowable mass as 450 kg.

ITEMS	MASS(kg)
Empty Mass	241.5
Pilot	75.0
Fuel (40 litres)	28.0
Chemical Load	90.0
TOTAL	434.5

With the Maximum allowable mass being 450 kg, the calculated mass during take-off was thus 450.0 – 434.5 kg, thus the mass for the aircraft was 15.5 kg below the maximum allowable mass for the aircraft.

1.7 Meteorological Information

1.7.1 The following weather information was obtained from the pilot's questionnaire:

Wind Direction	South-east	Wind Speed	5 kts	Visibility	7.5 km
Temperature	23°C	Cloud Cover	8/8	Cloud Base	+1 000 ft
Dew Point	Unknown				

1.8 Aids to Navigation

1.8.1 The aircraft was equipped with the standard navigation equipment for the type of aircraft and no reported defects were recorded.

1.9 Communications

1.9.1 The communication equipment that was installed in the aircraft was found to be in accordance to 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 did not occur at an aerodrome but at a private farm, approximately 4 km north-west of Ballito Aerodrome in KwaZulu-Natal.

1.11 Flight Recorders

1.11.1 The aircraft was not fitted with a flight data recorder (FDR) or a cockpit voice recorder, nor was either required by regulations.

1.12 Wreckage and Impact Information

1.12.1 The microlight collided with high-tension wires spanned at the end of the field and then impacted the ground before it came to rest.

1.13 Medical and Pathological Information

1.13.1 The pilot sustained fractured ribs and was admitted to the intensive care unit (ICU) in hospital.

1.14 Fire

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

1.15 Survival Aspects

1.15.1 The accident was survivable due to the fact that the pilot was properly restrained and forces were fairly low impact.

1.16 Tests and Research

1.16.1 None.

1.17 Organisational and Management Information

1.17.1 The aircraft was operated under the auspices of a valid licensed Air Operating Certificate (AOC) holder, no. G197D in order for the pilot to carry out crop spraying operations.

1.17.2 The pilot was in possession of a valid commercial pilot's licence and agricultural rating at the time of the accident.

1.17.3 The last annual inspection was carried out on 22 December 2009 at a total of 103.8 airframe hours by an AP of the Aero Club of South Africa

1.18 Additional Information

1.18.1 The permanent modification approval number M/09/386/E (Installation of Crop Spraying Equipment on Windlass Aquilla) was granted for the aircraft by the SACAA on 11 June 2009.

1.19 Useful or Effective Investigation Techniques

1.19.1 None.

2. ANALYSIS

2.1 The pilot was involved in a crop-spraying operations on a farm approximately 4 km north-west of Ballito. Although he was aware of high-tension wires that spanned one end of the field, he was not aware that the high-tension wires branched off, with the second high-tension wire running in a different direction near the end of the field being sprayed. During the spray run, he failed to notice the second high-tension wire and subsequently collided with it. The aircraft then impacted the ground causing serious injuries to the pilot.

2.2 The pilot was correctly licensed as a commercial pilot with an agricultural rating to carry out crop spraying operations and was rated on the aircraft type.

2.3 The accident occurred in daylight conditions. The weather conditions were fine with the visibility good, and did not contribute to the cause of the accident.

3. CONCLUSION

3.1 Findings

3.1.1 The pilot was the holder of a valid commercial pilot's licence with the aircraft type endorsed on his licence. He was also the holder of a valid medical certificate at the time of the accident.

3.1.2 The aircraft was maintained by an AP registered by the Microlight Association of South Africa (MISASA). No reported defects were recorded to indicate that the aircraft was not airworthy at the time of the accident.

3.1.3 The accident occurred during daylight conditions.

3.1.4 The weather conditions were reported to be fine, with the visibility good at the time of the accident.

3.1.5 The last annual inspection was certified by an AP at a total of 103.8 airframe hours. The aircraft had flown 48.5 hours since the last annual inspection was certified.

3.1.6 The maximum allowable mass for the aircraft was 450 kg and the calculated mass during take-off was 434.5 kg. The take-off mass was thus 15.5 kg below the maximum allowable mass for the aircraft.

3.2 Probable Cause/s

3.2.1 The aircraft collided with high-tension wires during a crop-spraying operation.

4. SAFETY RECOMMENDATIONS

4.1 None.

5. APPENDICES

5.1 None.

Report reviewed and amended by the Advisory Safety Panel on 18 May 2010
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