

AIRCRAFT ACCIDENT REPORT AND EXECUTIVE SUMMARY

				Reference:	CA18/2/3/8844	
Aircraft Registration	ZU-AZZ	Date of Accident	2 October 2010		Time of Accident	0415Z
Type of Aircraft	Windlass Trike (Microlight)		Type of Operation		Training	
Pilot-in-command Licence Type		Microlight pilot	Age	44	Licence Valid	Yes
Pilot-in-command Flying Experience		Total Flying Hours	360,3		Hours on Type	112,5
Last point of departure		Aero 57 Private aerodrome (Centurion) Gauteng				
Next point of intended landing		Aero 57 Private aerodrome Centurion) Gauteng				
Location of the accident site with reference to easily defined geographical points (GPS readings if possible)						
On the runway at a private aerodrome (approximately 1 nm south of Aero 57)(GPS coordinates S 25°51'47" E 28°05'04")						
Meteorological Information		Wind: 160 °TN/4 knots; Temperature: 13 °C, Dew point: 3 °C; Visibility: >10 km, Clouds: no significant clouds				
Number of people on board	1+1	No. of people injured	1+1	No. of people killed	0	
Synopsis						
<p>On Saturday 2 October 2010, at 0400Z, a Windlass Trike (microlight aircraft) operated by an aviation training organisation (ATO) and piloted by an instructor and a student pilot took off from Aero 57 private aerodrome on a training flight with the intention of landing back at Aero 57 private aerodrome after completion of circuits and landings at a private runway in the Mnandi area, west of Centurion. The training flight was being conducted under visual meteorological conditions (VMC).</p> <p>During the fifth take-off from the private runway at Mnandi, the instructor stated that he heard a strange noise, which he could not describe to the investigator, and directly thereafter the microlight aircraft violently veered to the right of Runway 35 and crashed into an embankment to the right of the runway.</p> <p>The aircraft was substantially damaged during the impact sequence.</p> <p>The instructor pilot was seriously injured and the student pilot sustained minor injuries as a result of the accident.</p>						
Probable Cause						
Loss of directional control during take-off.						
IARC Date				Release Date		



AIRCRAFT ACCIDENT REPORT

Name of Owner/Operator : Momberg FJ
Manufacturer : Solo Wings CC
Model : Windlass Trike
Nationality : South African
Registration Marks : ZU-AZZ
Place : Centurion Area (Gauteng)
Date : 2 October 2010
Time : 0400Z

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 2 October 2010, at 0400Z, a Windlass Trike (microlight aircraft) operated by a flying school and piloted by an instructor and a student took off from Aero 57 private aerodrome on a training flight with the intention of landing back at Aero 57 private aerodrome after completion of circuits and landings at a private runway in the Mnandi area, west of Centurion. The training flight was being conducted under VMC.
- 1.1.2 During the fifth take-off from the private runway at Mnandi, the instructor stated he heard a strange noise which he could not describe to the investigator, and directly thereafter the aircraft violently veered off to the right of Runway 35 at the private runway.
- 1.1.3 The instructor stated he and the student corrected the veer to the right by applying opposite nose wheel steering, but to no avail.
- 1.1.4 The aircraft crashed into an embankment to the right of the runway, whereafter it bounced into the air with the right wing low. The instructor immediately counteracted the attitude to the left, where after the nose wheel hit the ground.
- 1.1.5 The aircraft sustained substantial damage during the collision with the embankment.

1.1.6 The pilot and student sustained injuries as a result of the accident.

1.2 Injuries to Persons

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

1.3 Damage to Aircraft

1.3.1 The aircraft sustained substantial damage in the crash.

1.4 Other Damage

1.4.1 No other damage was caused during the sequence of the accident.

1.5 Personnel Information

1.5.1 Instructor Pilot

Nationality	South African	Gender	Male	Age	44
Licence Number	*****	Licence Type	Microlight aeroplane pilot		
Licence valid	Yes	Type Endorsed	Yes		
Ratings	Instructor				
Medical Expiry Date	28 February 2012				
Restrictions	None				
Previous Accidents	None				

Flying Experience

Total Hours	360,3
Total Past 90 Days	50,4
Total on Type Past 90 Days	49,9
Total on Type	112,5

1.5.2 Student pilot

Nationality	South African	Gender	Male	Age	45
Licence Number	*****	Licence Type	No licence		
Licence valid	No licence	Type Endorsed	No		
Ratings	None				
Medical Expiry Date	N/A				
Restrictions	None				
Previous Accidents	None				

Flying Experience

Total Hours	12,0
Total Past 90 Days	12,0
Total on Type Past 90 Days	12,0
Total on Type	12,0

1.6 Aircraft Information

Airframe:

Type	Windlass Trike	
Serial Number	WL 553	
Manufacturer	Solo Wings CC	
Year of Manufacture	1996	
Total Airframe Hours (At time of Accident)	309	
Last Annual inspection (Hours & date)	187,8	27 October 2009
Hours since Last Annual Inspection	121,2	
Authority to Fly (Issue Date)	30 October 2009	
C of R (Issue Date) (Present owner)	13 March 2003	
Operating Categories	Training	

Engine:

Type	Rotax 582 UL
Serial Number	4855575
Hours since New	309
Hours since Overhaul	TBO not reached

Propeller :

Type	P Prop
Serial Number	2655
Hours since New	112,5
Hours since Overhaul	New prop fitted

1.7 Meteorological Information

- 1.7.1 Meteorological information was obtained from the South African Weather Service. The most likely weather conditions at the time and place of the accident were as follows:

Wind direction	160°TN	Wind speed	4 knots	Visibility	>10 000 m
Temperature	13 °C	Cloud cover	NSC	Cloud base	Nil
Dew point	3 °C				

1.8 Aids to Navigation

1.8.1 The aircraft was equipped with a magnetic compass, which had no recorded defects prior to or during the flight. The last recorded compass swing on this compass was done in 2007.

1.9 Communications

1.9.1 The aircraft was equipped with one (1) very high frequency (VFR) radio which had no recorded defects prior to or during the flight.

1.10 Aerodrome Information

The accident happened at a private aerodrome situated in an open field in the Mnandi area, approximately 11 km west of Centurion at a geographical position determined as S 25°51'43" E 028°04'57".

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.

1.1.2 Wreckage and Impact Information

1.12.1 The owner of the microlight aircraft removed the wreckage from the scene before the investigator was informed about the accident and the required approval was granted for the removal, thereby interfering with an aircraft which had been involved in an accident as referred to in Part 12.04.4(1)(a) of the Civil Aviation Regulation of 1997, as amended, resulting in all wreckage and impact information at the scene of the accident being lost.

1.13 Medical and Pathological Information

1.13.1 The instructor sustained serious injuries and the student sustained minor injuries during the sequence of the accident.

1.14 Fire

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

1.15 Survival Aspects

1.15.1 This accident was considered survivable because both pilots had been wearing safety harnesses and owing to the low impact forces associated with the accident.

1.16 Tests and Research

1.16.1 None.

1.17 Organisational and Management Information

1.17.1 This flight was conducted by an SACAA-approved aviation training organisation (ATO) which was in possession of a valid ATO certificate issued by the SACAA. The ATO had been operating for more than a year without a manual of procedure as it was awaiting approval of this document from the SACAA.

1.17.2 The instructor pilot had a total of 360,3 flying hours of which approximately 100 hours were instruction hours.

1.17.3 The last annual inspection on this aircraft was certified on 27 October 2009 at 187,8 hours by an approved person (AP). During this certification, the AP certified modifications done to this aircraft without approval from the regulating authority.

1.18 Additional Information

1.18.1 According to the owner, the aircraft had been involved in several hard landing incidents prior to this accident, but no evidence of any aircraft inspections following these hard landing incidents are available or documented.

1.18.2 According to the owner, the aircraft was rebuilt three times but no evidence in this regard could be found in the aircraft documentation.

1.18.3 Major component changes (propellers) were done without any documented records thereof.

1.18.4 The aircraft had been flown with a cracked engine mounting with the knowledge of the owner since March 2010 without any entries in this regard in the aircraft's technical documentation – nor any rectification that followed.

1.18.5 There was no flight folio available for this aircraft.

1.18.6 Handwritten changes were made to the Flight Manual which was not approved by the regulating authority.

1.18.7 The investigator in charge (IIC) and an advisor performed a detailed inspection of the wreckage after it was recovered by the owner from the scene of the accident. No damage other than impact damage could be found on the structure and components of the aircraft. The wreckage was also inspected by two Inspectors from the Airworthiness Department of the SACAA and they also could not find any evidence of a structure/component breakage that could have contributed to or caused the accident.

1.18.8 The following modifications were done to the aircraft without any approval from the regulating authority:

- 1.) The keel tube (boom) was replaced by a stainless steel tube.
- 2.) The seat frame was replaced with a stainless steel seat frame.

- 3.) The rear steering footrest was replaced with that of another aircraft type.
- 4.) A stone shield was fitted to the underside of the aircraft between the rear wheels.
- 5.) A radiator attachment bracket was improvised and fitted to the aircraft by the owner.

1.19 Useful or Effective Investigation Techniques

1.19.1 None.

2. ANALYSIS

- 2.1 The flight was conducted under visual flight rules (VFR). It was a training flight.
- 2.2 The instructor pilot was the holder of a valid microlight aeroplane pilot licence. He had an instructor's rating on the Windlass Trike and was in possession of a valid medical certificate.
- 2.3 The student was not yet in possession of a student pilot's licence.
- 2.4 Maintenance documents revealed that the last annual inspection had been carried out on 27 October 2009 by an AP in possession of a valid AP certificate. During the certification of this aircraft after the annual inspection, the AP certified various modifications to the aircraft which were never approved by the regulating authority.
- 2.5 The aircraft's logbook had been verified and records indicate that not all the work done to the aircraft and only some of the modifications to the aircraft had been entered in the aircraft's logbook. Various modifications were done to the aircraft without any approval for such modifications.
- 2.6 The instructor stated he had heard a strange noise before the aircraft veered off the runway and that directional control was not possible. The investigator, an advisor and two airworthiness Inspectors did a thorough inspection of the wreckage after the accident and could not find any damage to the aircraft other than that caused during the accident.
- 2.7 Fine weather conditions prevailed at the time of the accident. The wind was calm, which allowed the instructor to change runways after each landing and takeoff.

3. CONCLUSION

3.1 Findings

- 3.1.1 The instructor pilot was properly certified and qualified according to current regulations to perform this flight.
- 3.1.2 The aircraft had a valid Authority to Fly and was recorded as being serviceable, although several modifications were certified as approved, while they had not been approved in accordance with the requirements of the regulating authority.

- 3.1.3 Major components had been changed without recording the changes in the aircraft's logbook.
- 3.1.4 No mechanical defect could be found indicating the cause of the accident.
- 3.1.5 The accident was regarded as survivable due to the low impact forces associated with the impact.
- 3.16 Prevailing weather conditions at the time of the accident did not have an effect on this accident.

3.2 Probable Cause/s

- 3.2.1 Loss of directional control during take-off.

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: