SOUTH AFRICAN CIVIL AVIATION AUTHORITY

Section/division **Accident and Incident Investigations Division** Form Number: CA 12-12a

AIRCRAFT ACCIDENT REPORT AND EXECUTIVE SUMMARY

				Reference:		CA18/2/3/8830	
Aircraft Registration	**ZU-DTB**	**Date of Accident**	9 September 2010			**Time of Accident**	1505Z
Type of Aircraft	DynAero MCR 4 S		**Type of Operation**		Private		
Pilot-in-command Licence Type	Private Pilot		**Age**	52	**Licence Valid**	Yes	
Pilot-in-command Flying Experience	Total Flying Hours		565,0		Hours on Type	339,0	
Last point of departure	Bapsfontein Fly Inn Park Aerodrome.						
Next point of intended landing	Barberton						
Location of the accident site with reference to easily defined geographical points (GPS readings if possible)							
Off the runway at Carolina Airstrip.							
Meteorological Information	Wind direction: 27˚/10 kts, Temperature:18 ˚C, Visibility: Good, Cloud base: CAVOK.						
Number of people on board	1 + 1	**No. of people injured**	0	**No. of people killed**	0		

Synopsis

The pilot accompanied by a passenger flew the aircraft on a private flight from Bapsfontein Fly Inn Park to Barberton, when the pilot decided to do a quick stop at Carolina and landed the aircraft on Runway 27. The runway has a slight down-slope and grass surface, which prevented the brakes from working effectively and bringing the aircraft to a stop. The pilot applied more brake pressure than usual during the landing roll. The pilot lost directional control when the aircraft pulled to the left and suddenly veered off the runway. The nosewheel entered a ditch, which caused the nose landing gear to collapse. The nose section of the aircraft then hit the ground.

The aircraft sustained substantial damage during the accident.

The pilot and passenger did not sustain any injuries.

Probable Cause

The pilot experienced a loss of directional control during the landing run and the aircraft veered off the runway onto a rough grass area resulting into a nose landing gear collapse.

IARC Date		Release Date	

AIRCRAFT ACCIDENT REPORT

Name of Owner/Operator : Africa A La Carte CC
Manufacturer : DynAero
Model : MCR 4 S
Nationality : South African
Registration Marks : ZU-DTB
Place : Carolina
Date : 09 September 2010
Time : 1505Z

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 The pilot accompanied by a passenger flew the aircraft from Bapsfontein Aerodrome Fly Inn Park to Barberton. It was a private flight flown under visual flight rules (VFR) by day. The pilot reported that when she arrived at Barberton, the weather did not permit her to land.

1.1.2 The flight was uneventful until the aircraft landed on Runway 27 at Carolina. The pilot turned around and realised that she had to divert to Carolina because of the bad weather. It was the first time that the pilot had flown to Carolina and landed at the airfield. The aircraft landed on Runway 27 at a private airfield at Carolina. The runway has a down-slope and grass surface which caused the brake to be less effective in slowing down the aircraft sufficiently during the landing roll. The pilot also applied the handbrake in an effort to slow down and to stop the aircraft, but the aircraft pulled to the left and veered off the runway. The aircraft subsequently rolled through a ditch off the runway, causing the nose landing gear to collapse.

1.1.3 The aircraft was substantially damaged during the accident. The damage was caused to the nose landing gear, bottom nose cowling, flap and propeller. The pilot and passenger did not sustain any injuries.

1.2 Injuries to Persons

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

1.3 Damage to Aircraft

1.3.1 The aircraft sustained substantial damage in the accident.

Figure 1, shows aircraft after it came to stop off the runway.

1.4 Other Damage

1.4.1 None.

1.5 Personnel Information

Nationality	South African	Gender	Female	Age	52
Licence Number	xxxxxxxxxxxx	Licence Type	Private Pilot		
Licence valid	Yes	Type Endorsed	Yes		
Ratings	Flight Tests – Single Engine Piston				
Medical Expiry Date	30 April 2011				
Restrictions	None				
Previous Accidents	None				

Flying Experience

Total Hours	565,0
Total Past 90 Days	20,0
Total on Type Past 90 Days	20,0
Total on Type	339,0

1.6 Aircraft Information

Airframe

Type	MCR 4 S	
Serial Number	49	
Manufacturer	DynAero	
Date of Manufacture	March 2005	
Total Airframe Hours (At time of Accident)	749,0	
Last Annual Inspection (Date & Hours)	22 July 2010	741,68
Hours since Last Annual Inspection	8,32	
Authority to Fly (Issue Date)	4 November 2009	
C of R (Issue Date) (Present owner)	8 June 2005 Africa A La Carte CC	
Accident/Incident history	Lightning Strike on 17 October 2006	
Operating Categories	Private Operation Authority to Fly	

Engine:

Type	Rotax 914
Serial Number	4420433
Hours since New	749,0
Hours since Overhaul	166,5

Propeller:

Type	MTVP D94315
Serial Number	04646
Hours since New	749,0
Hours since Overhaul	unknown

1.6 Meteorological Information

1.7.1 The weather information below was obtained from the Pilot's Questionnaire. The weather condition was at the accident site.

Wind direction	27˚	Wind speed	±10 kts	Visibility	Good
Temperature	26 ˚C	Cloud cover	CAVOK	Cloud base	CAVOK
Dew point	unknown				

1.8 Aids to Navigation

1.8.1 The aircraft had standard navigation equipment installed, which was approved for the type. There was no defect or report of malfunction with the navigation equipment during the flight that could have contributed to the accident. The navigation equipment was in a serviceable condition.

1.8.2 The pilot flew the aircraft under VFR by day. The pilot did not require special navigation instrumentation equipment during the flight or landing. The aircraft landed at a private airstrip on a farm and she was relying on visual references to do a safe landing.

1.9 Communications

1.9.1 The pilot operated the aircraft from an unmanned aerodrome. The flight was flown in uncontrolled airspace. The pilot was using a handheld radio to broadcast her intentions in flight. The radio was in a serviceable condition and there was no report of defects or malfunctioning.

1.10 Aerodrome Information

1.10.1 The aircraft was involved in the accident at a private airstrip on a private farm at GPS co-ordinates: S26˚04'41.6" E030˚05'33.2". The pilot landed the aircraft on the grass runway. The field elevation of the accident site was approximately 5 425 feet above ground level (AGL).

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 aircraft approached the airfield from westerly direction and landed on Runway 27. The runway had a down-slope which prevented the brakes from being effective and bringing the aircraft to a stop. The pilot pulled the handbrake to assist but it resulted in the aircraft veering off the runway onto a rough grass area. The nose wheel entered in a ditch which caused the nose landing gear to collapse.

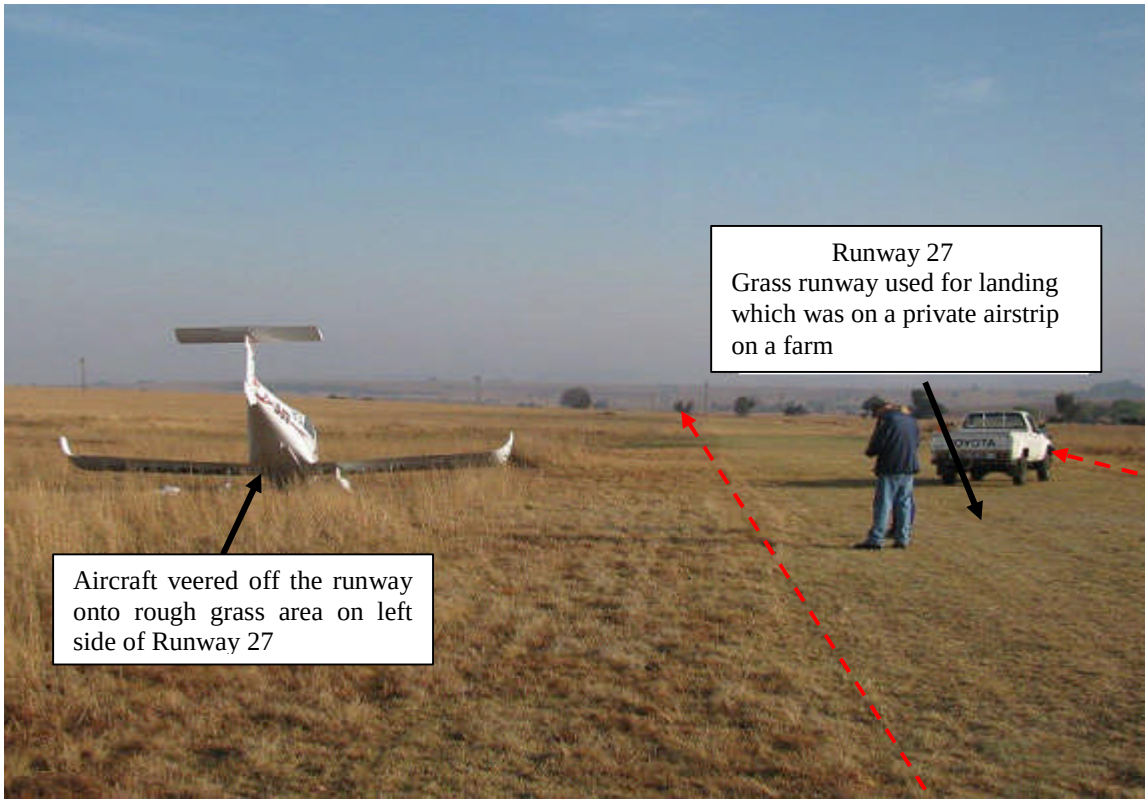

Figure 2 shows private airstrip, runway used and rough grass area where the aircraft was involved in the accident.

Undercarriage

1.12.2 The damage caused to the undercarriage was as a result of the nose wheel collapsing.

Engine and Propeller

1.12.3 One blade of the two-bladed propeller was damaged. The propeller blade tip hit the ground and bent to the rear. The indication is that the propeller was not under power when it hit the ground. This is also an indication that the engine was most probably not running at the time of impact.

1.12.4 When the nose wheel collapsed, the nose section of the aircraft hit the ground. The bottom engine cowling and firewall was damaged.

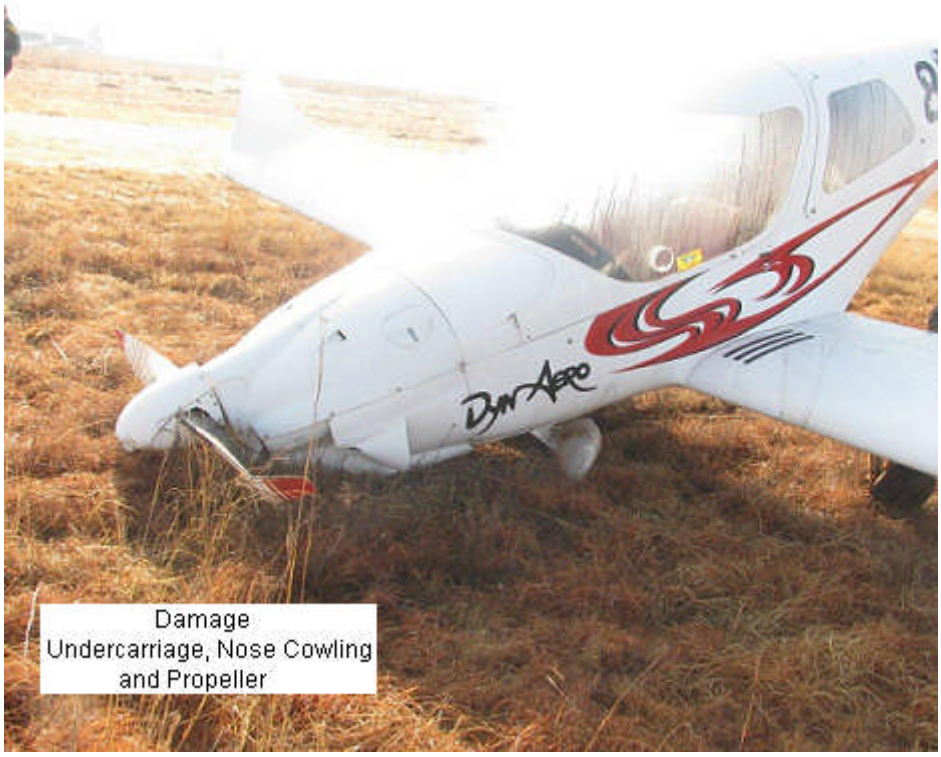

Figure 3 shows damage caused to the aircraft.

1.13 Medical and Pathological Information

1.13.1 None.

1.14 Fire

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

1.15 Survival Aspects

1.15.1 The accident was considered to be survivable. The airframe structure of the aircraft was intact after the accident. The damage sustained was caused to the landing gear and bottom nose section only. The pilot and passenger were properly restrained with the safety belts and harnesses. They sustained no injuries in the accident.

1.16 Tests and Research

1.16.1 None.

1.17 Organisational and Management Information

1.17.1 The owner operated the aircraft privately. The owner indicated that she flew the aircraft on a private flight on the day.

1.17.2 The last Annual Inspection of the aircraft was carried out by an Approved Person. The Approved Person had a valid approval certificate which was issued by the Aero Club of South Africa.

1.18 Additional Information

1.18.1 None.

1.19 Useful or Effective Investigation Techniques

1.19.1 None.

2. ANALYSIS

2.1 The pilot flew the aircraft in a private flight under VFR by day. The aircraft left the Bapsfontein Fly Inn Park for Barberton. The pilot decided to landed the aircraft at a private airfield in Carolina. The flight was uneventful until the landing. This was the first time that the pilot had landed at that airfield.

2.2 The aircraft was in the landing configuration and touched down normally on the grass runway. During the landing roll the pilot applied the brakes to slow down and stop the aircraft. The pilot realised that the brakes were not effective and decided to pull the handbrake, but the nose of the aircraft suddenly veered toward the left and resulted in a loss of directional control. The aircraft veered to the left and rolled off the runway onto a rough grass area. On the rough grass area the nose wheel entered a ditch, which resulted in a nose landing gear collapse. Due to the nose wheel collapse, the nose section of the aircraft hit the ground and sustained substantial damage.

2.3 The runway had a slight down-slope which prevented the wheel brakes from working effectively during the landing roll. The other factors were that the aircraft landed on a grass runway, where it is always difficult for an aircraft's brakes to be effective. The aircraft wheel size can also play a role in aircraft not stopping effectively.

2.4 The pilot was appropriately trained, experienced and had a valid licence. There was no indication of any medical condition which may have prevented her from flying the aircraft safely on the day. The pilot had ensured that both she and the passenger were properly restrained with safety belts and harnesses. The pilot was not familiar with the location and not aware of the down-slope of the runway. She only became aware of the down-slope after landing and during the landing roll. The aircraft's forward speed was too low for a go-around and the pilot decided to keep the aircraft on the ground.

2.5 The authority to fly of the aircraft was valid and the aircraft was in a serviceable condition for the flight. There was no report of any performance-related anomaly during the flight and landing. The brake was operating normally but was ineffective due to the ground speed as a result of the down-slope.

3. CONCLUSION

3.1 Findings

3.1.1 The pilot accompanied by a passenger flew the aircraft from Bapsfontein Aerodrome Fly Inn Park to Barberton Aerodrome but diverted to Carolina due to weather.

3.1.2 It was a private flight under VFR by day.

3.1.3 The pilot had a valid private pilot's license and the type rating was endorsed on it. The pilot also had a valid unrestricted medical certificate.

3.1.4 The pilot did not report any defect or malfunction experienced with the aircraft in flight.

3.1.5 The aircraft had a valid Authority to Fly and was in a serviceable condition.

3.1.6 The flight time was approximately 1,5 hours to an airfield at Carolina, where the aircraft landed.

3.1.7 Runway 27 that was used for landing had a down-slope, which contributed to making the brake less effective in slowing the aircraft down or bringing it to a stop.

3.1.8 The pilot applied more brake force than usual and also the handbrake, but was unsuccessful in bringing the aircraft to a stop.

3.1.9 The pilot decided not to do a go-around.

3.1.10 When the handbrakes were applied, the aircraft veered to the left off the runway onto a rough grass area.

3.1.11 There was a ditch in the grass, stretching from the left of the runway, crossing

underneath the runway to the right side of the airfield.

3.1.12 The ditch was obscured in the grass and the pilot could not see it.

3.1.13 The nose wheel entered into the ditch, causing the nose landing gear to collapse.

3.1.14 The nose section of the aircraft dropped to the ground, causing substantial damage to the aircraft.

3.1.15 The nose landing gear, bottom nose cowling, flap, propeller and firewall were damaged.

3.1.16 The pilot and passenger did not sustain any injuries in the accident.

3.2 Probable Cause/s –

3.2.1 The pilot experienced a loss of directional control during the landing run and the aircraft veered off the runway onto a rough grass area resulting into a nose landing gear collapse

4. SAFETY RECOMMENDATIONS

4.1 None

5. APPENDICES

5.1 None.

Report reviewed and amended by the Advisory Safety Panel 18 January 2011.

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