

AIRCRAFT ACCIDENT REPORT AND EXECUTIVE SUMMARY

				Reference:	CA18/2/3/8812	
Aircraft Registration	ZU-ASL	Date of Accident	22 July 2010		Time of Accident	1445Z
Type of Aircraft	Bushbaby 450		Type of Operation		Private	
Pilot-in-command Licence Type		MPL (Microlight)	Age	42	Licence Valid	Yes
Pilot-in-command Flying Experience		Total Flying Hours	136,45		Hours on Type	61,05
Last point of departure		New Tempe Bloemfontein (FATP)				
Next point of intended landing		New Tempe Bloemfontein (FATP)				
Location of the accident site with reference to easily defined geographical points (GPS readings if possible)						
Private farm 15 miles south of New Tempe Aerodrome						
Meteorological Information		Surface wind: Easterly, 3 knots; temperature: 14°C; V isibility: CAVOK				
Number of people on board	1+1	No. of people injured	0	No. of people killed	0	
Synopsis						
<p>On 22 July 2010, at approximately 1400Z, the pilot accompanied by a passenger took off from New Tempe Aerodrome on a local pleasure flight with the intention of returning to New Tempe after the flight. The pilot stated that the aircraft developed a severe vibration coming from the engine, approximately 45 minutes into the flight. He then decided to execute an emergency landing on a flat, grassy area. During the landing sequence, the nosewheel dug into soft ground and the aircraft nosed over. The aircraft sustained substantial damage.</p> <p>A post-accident examination of the airframe and engine revealed that the severe in-flight vibration was caused by a loosened stud from the flywheel. The vibration of the flywheel was transferred to the whole engine.</p>						
Probable Cause						
Unsuccessful forced landing after the aircraft had experienced severe vibration in flight.						
Contributory factor						
A stud from the flywheel came adrift.						
IARC Date				Release Date		

AIRCRAFT ACCIDENT REPORT

Name of Owner/Operator : Coetzer RB
Manufacturer : Kitplanes for Africa
Model : Bushbaby 450
Nationality : South African
Registration Marks : ZU-ASL
Place : Private Farm
Date : 22 July 2010
Time : 1445Z

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 22 July 2010, at approximately 1400Z, the pilot accompanied by a passenger took off from New Tempe Aerodrome on a local pleasure flight with the intention of returning to New Tempe after the flight.
- 1.1.2 The pilot stated that the aircraft developed severe vibration from the engine, approximately 45 minutes into the flight. He then decided to execute an emergency landing on a flat, grassy area. During the landing sequence, the nosewheel hit a mound of soil and nosed over. The aircraft sustained substantial damage.
- 1.1.3 The accident happened in daylight, at approximately 1445Z, on a private farm 15 miles south of New Tempe Aerodrome.

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 to the nose gear, the wings, and the tail.



FIGURE 1: Damage to the aircraft

1.4 Other Damage

1.4.1 There was no other damage.

1.5 Personnel Information

Nationality	South African	Gender	Male	Age	42
Licence Number	0272225723	Licence Type	MPL		
Licence valid	Yes	Type Endorsed	Yes		
Ratings	Flight Test				
Medical Expiry Date	31 August 2009				
Restrictions	None				
Previous Accidents	None				

Flying Experience:

Total Hours	136,45
Total Past 90 Days	13,0
Total on Type Past 90 Days	9,3
Total on Type	61,05

1.6 Aircraft Information

Airframe :

Type	Bushbaby 450	
Serial Number	004	
Manufacturer	Kitplanes for Africa	
Date of Manufacture	April 1995	
Total Airframe Hours (At time of Accident)	586,35	
Last MPI (Date & Hours)	7 May 2010	578,9
Hours since Last MPI	7,45	
Authority to Fly (Issue Date)	10 May 2010	
C of R (Issue Date) (Present owner)	11 November 2010	
Operating Categories	Standard	

Engine :

Type	Volkswagen 2.3
Serial Number	Volkswagen 2.3
Hours since New	222,15
Hours since Overhaul	TBO not yet reached

Propeller :

Type	Warp drive
Serial Number	Unknown
Hours since New	222,15
Hours since Overhaul	TBO not yet reached

1.7 Meteorological Information

1.7.1 The weather information was obtained from the pilot questionnaire.

Wind direction	Easterly	Wind speed	3 knots	Visibility	CAVOK
Temperature	14°C	Cloud cover	Nil	Cloud base	Nil
Dew point	-----				

1.8 Aids to Navigation

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

1.9 Communications

1.9.1 The aircraft was equipped with standard communications systems and none was reported unserviceable prior to or during the accident.

1.10 Aerodrome Information

1.10.1 The accident occurred on a private farm, approximately 20 kilometres outside Bloemfontein.

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 flat, grassy terrain on a private farm about 20 km outside Bloemfontein. During the landing sequence, the aircraft hit a mound of soil and nosed over, coming to rest in an inverted position.

1.12.2 The aircraft sustained substantial damage. The integrity of the flight control system was established and all parts of the aircraft were accounted for at the accident site.

1.13 Medical and Pathological Information

1.13.1 Nobody was injured in the accident.

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 as both occupants were securely strapped to their seats, and the cabin area remained intact.

1.16 Tests and Research

1.16.1 The wreckage and engine were recovered and taken to the owner's facility for further investigation. During examination it was discovered that a stud had come loose from the flywheel. This caused severe vibration of the flywheel, which was transferred to the whole engine.

1.17 Organisational and Management Information

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

1.18 Additional Information

1.18.1 None.

1.19 Useful or Effective Investigation Techniques

1.19.1 None.

2. ANALYSIS

- 2.1 On 22 July 2010, at approximately 1400Z, the pilot accompanied by a passenger took off from New Tempe Aerodrome on a local pleasure flight with the intention of returning to New Tempe after the flight. The pilot stated that the aircraft developed severe vibration from the engine, approximately 45 minutes into the flight. He then decided to execute an emergency landing on a flat, grassy area. During the landing sequence, the nosewheel dug into soft ground and the aircraft nosed over. The aircraft sustained substantial damage.
- 2.2 A post-accident examination of the airframe and engine revealed that the severe vibration that emanated in flight was caused by a loosened stud from the flywheel. The vibration of the flywheel was transferred to the whole engine.

3. CONCLUSION

3.1 Findings

- 3.1.1 The pilot was a holder of a valid microlight pilot's licence.
- 3.1.2 The aircraft had a valid authority to fly.
- 3.1.3 Weather conditions were reported to be fine; they were not a factor in this accident.
- 3.1.4 The accident happened in daylight.
- 3.1.5 The aircraft was certified, equipped and maintained in accordance with regulations and approved procedures.
- 3.1.6 The aircraft experienced severe vibration in flight due to a loose stud from the flywheel.
- 3.1.7 During the landing sequence, the nosewheel dug into soft ground and the aircraft nosed over.

3.2 Probable Cause/s

- 3.2.1 Unsuccessful forced landing after the aircraft experienced severe vibration in flight.

Contributory factor/s

- 3.2.2 A stud from the flywheel came adrift.

4. SAFETY RECOMMENDATIONS

4.1 None.

5. APPENDICES

5.1 None.

Compiled by:

Musa Maseko

Date:

for Commissioner for Civil Aviation

Investigator-in-charge:

Date:

Co-investigator:

Date: