

AIRCRAFT ACCIDENT REPORT AND EXECUTIVE SUMMARY

				Reference:	CA18/2/3/8606	
Aircraft Registration	ZS-BMG	Date of Accident	14 January 2009		Time of Accident	1328Z
Type of Aircraft	Beech Baron 58		Type of Operation		Private	
Pilot-in-command Licence Type		Airline Transport	Age	39	Licence Valid	Yes
Pilot-in-command Flying Experience		Total Flying Hours	7 979.1		Hours on Type	41.3
Last point of departure		Rand Aerodrome (FAGM)				
Next point of intended landing		Lanseria Aerodrome (FALA)				
Location of the accident site with reference to easily defined geographical points (GPS readings if possible)						
Runway 06R at FALA						
Meteorological Information		The weather was fine.				
Number of people on board	2 + 4	No. of people injured	0	No. of people killed	0	
Synopsis						
<p>On 14 January 2009, the pilot took off on a private flight from FAGM to FALA, where he was cleared to join on a right base for runway 06R. On the base leg, he lowered the landing gear and immediately heard a bang. The flight controls froze, aileron control was lost and the pilot could not turn the aircraft. He declared a Mayday, informing the Air Traffic Controller (ATC) of the problem. The green light indication for the landing gear down was ON, but the ATC was requested to check visually if the undercarriage was down and the confirmation was given. The flare and touchdown on the main wheels were smooth and on centerline. As the nose was lowered, the propellers made contact with the runway.</p> <p>The investigation revealed that the nose wheel was stuck in the wheel compartment. The push-pull rod had been unable to push the nose-gear, and as a result, the torque tube had bent and compressed the aileron cable, causing loss of aileron control. The aircraft landed with the nose gear retracted.</p> <p>Further investigation revealed that the nose wheel was off-centre because two spacers, instead of one, had been inserted on the right-hand side of the wheel</p>						
Probable Cause						
<p>The aircraft landed with the nose gear retracted due to incorrect fitment of the nose landing gear.</p>						
IARC Date			Release Date			



AIRCRAFT ACCIDENT REPORT

Name of Owner/Operator : South African Property Guarantee Exchange (PTY) Ltd
Manufacturer : Beech Aircraft Corporation
Model : BE58
Nationality : South African
Registration Marks : ZS-BMG
Place : Lanseria Aerodrome, South Africa
Date : 14 January 2009
Time : 1328Z

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 14 January 2009, the pilot took off on a private flight from Rand aerodrome to Lanseria aerodrome.
- 1.1.2 At FALA, he was cleared to join on a right base for runway 06R. On the base leg, he lowered the landing gear and immediately heard a bang. The flight controls froze, aileron control was lost and the pilot could not turn the aircraft. He declared a Mayday, informing the Air Traffic Controller (ATC) of the problem. The green light indication for the landing gear down was ON, but the ATC was requested to check visually if the gear was down.
- 1.1.3 The ATC asked the pilot to do a flyby past the tower, which he declined due to his limited controls. He managed to line the aircraft up with the runway using both rudder and differential thrust. The tower then confirmed that the gear was down.
- 1.1.4 The approach was flown at a slightly higher than normal speed of approximately 120 mph due to the control problem. The flare and touchdown on the main wheels were smooth and on centerline. As the nose lowered, the propellers made contact with the runway. The pilot then pulled back on the controls, which caused the aircraft to become airborne again. The mixture was cut, the aircraft touched down again and the pilot gently lowered the nose until it settled onto the runway.
- 1.1.5 The accident occurred in daylight.

1.2 Injuries to Persons

Injuries	Pilot	Crew	Pass.	Other
Fatal	-	-	-	-
Serious	-	-	-	-
Minor	-	-	-	-
None	1	1	4	-

1.3 Damage to Aircraft

1.3.1 The aircraft sustained damage to the both propellers and the nose cone.



Figure 1. The aircraft after the landing with its nose wheel in a retracted position.

1.4 Other Damage

1.4.1 There was no other damage.

1.5 Personnel Information

Nationality	South African	Gender	Male	Age	39
Licence Number	*****	Licence Type	Airline Transport		
Licence valid	Yes	Type Endorsed	Yes		
Ratings	Instructor Gr 2, Instrument and Test Pilot				
Medical Expiry Date	2 March 2010				
Restrictions	None				
Previous Accidents	None				

Flying Experience

Total Hours	7 979.1
Total Past 90 Days	237.1
Total on Type Past 90 Days	25.5
Total on Type	41.3

1.6 Aircraft Information

Airframe

Type	Beech Baron 58	
Serial Number	TH-250	
Manufacturer	Beech Aircraft Corporation	
Year of Manufacture	1972	
Total Airframe Hours (at time of accident)	1 870.23	
Last MPI (Date & Hours)	25 June 2008	1 785.5
Hours since Last MPI	84.73	
C of A (Issue Date)	30 July 1973	
C of R (Issue Date) (Present Owner)	1 October 2008	
Operating Categories	Standard	

Engine 1

Type	Continental IO-520-C
Serial Number	201968-72C
Hours since New	2 912.83
Hours since Overhaul	184.63

Engine 2

Type	Continental IO-520-C
Serial Number	210577-72C
Hours since New	Unknown
Hours since Overhaul	1 081.63

Propeller 1

Type	Hartzell PHC-J3YF-2UF
Serial Number	E064E
Hours since New	2 711.03
Hours since Overhaul	910.93

Propeller 2

Type	Hartzell PHC-J3YF-2UF
Serial Number	E065E
Hours since New	2 711.03
Hours since Overhaul	910.93

1.7 Meteorological Information

1.7.1 According to the pilot, the weather was fine (CAVOK).

1.8 Aids to Navigation

1.8.1 The aircraft was equipped with standard navigation instrumentation. None was reported unserviceable during the flight or prior to the accident.

1.9 Communications

1.19.1 The aircraft was equipped with very high frequency (VHF) equipment. None was reported unserviceable during the flight or prior to the accident.

1.9.2 The pilot made a distress call to inform the ATC that the aircraft has lost aileron control and could not turn.

1.10 Aerodrome Information

Aerodrome Location	22nm NW of O.R. Tambo International Aerodrome	
Aerodrome Co-ordinates	S25° 56' 14' E027° 54' 48.86'	
Aerodrome Elevation	4 517 feet	
Aerodrome Status	Manned	
Runway Designations	06L/24R	2 910 m x 30 m
Runway Dimensions	06R/24L	1 760 m x 23 m
Runway Used	06R	
Runway Surface	Asphalt LCN 65	
Approach Facilities	NDB, ILS, VOR, DME	

1.11 Flight Recorders

1.11.1 The aircraft was not equipped with any flight recorders. Fitting these was not a regulatory requirement.

1.12 Wreckage and Impact Information

1.12.1 The approach to runway 06R was flown at a slightly higher than normal speed – approximately 120 mph – due to the control problem. The flare and touchdown on the main wheels was smooth and on centerline. As the nose was lowered, the propellers made contact with the runway. The pilot then pulled back on the controls which caused the aircraft to become airborne again. The mixture was cut, the aircraft touched down again and the pilot gently lowered the nose until it settled onto the runway.

1.13 Medical and Pathological Information

1.13.1 None considered necessary or relevant to this accident.

1.14 Fire

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

1.15 Survival Aspects

1.15.1 The accident was considered a survivable accident as there was no damage to the cabin area.

1.16 Tests and Research

1.16.1 Inspection of the nose gear found that the nose wheel was stuck inside the wheel bay.



Figure 2. The nose wheel stuck in the wheel bay.

1.16.2 The torque tube was bent. It was also chuffed, indicating that it had rubbed against the aileron cable, and there was green paint on the cable showing where it had been in contact with the torque tube.

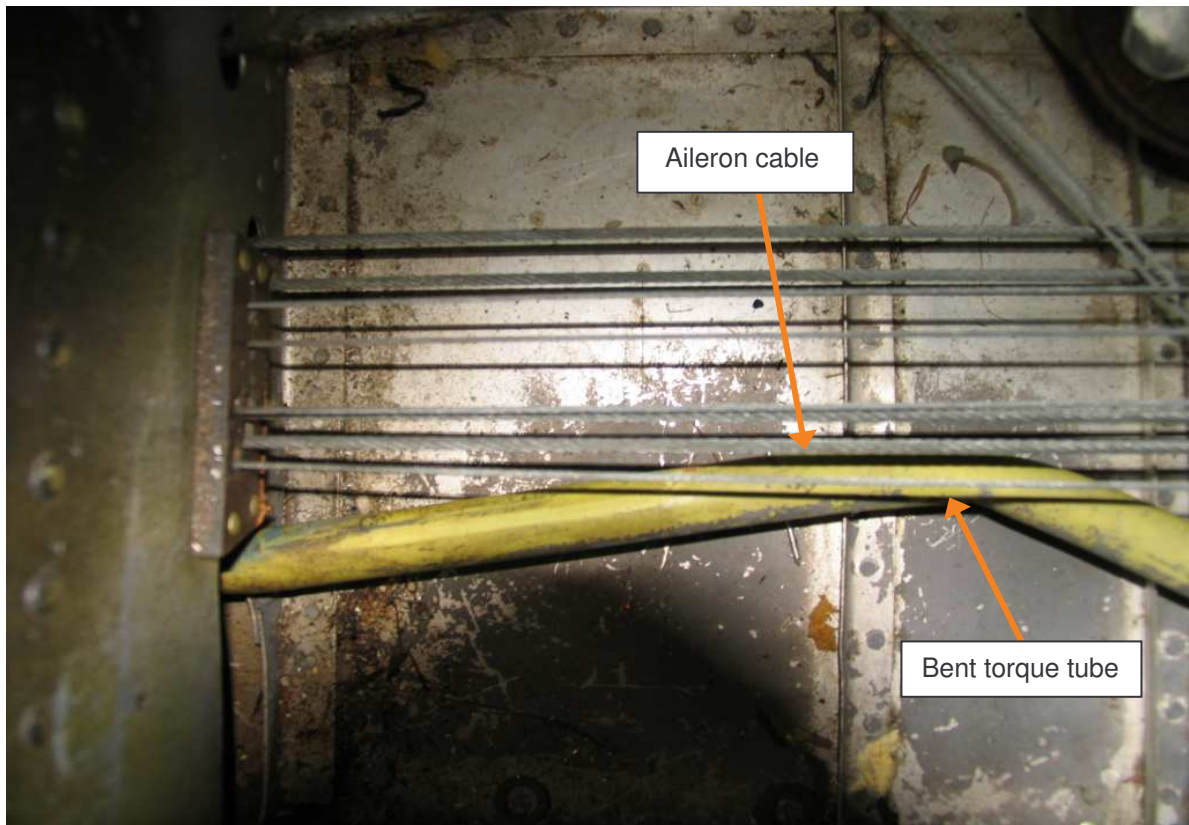


Figure 3. View of the wheel bay showing the cables and torque tube.

1.16.3 Further investigation revealed that the nose wheel was off-centre because two spacers, instead of one, had been inserted on the right-hand side of the wheel.



Figure 4. Two spacers on the right of the wheel.



Figure 5. The wheel off-centre.

Make mention that of the fact that both spacers were inserted on one side and nothing on the other side.

1.17 Organisational and Management Information

1.17.1 This was a private flight.

1.17.2 The Aircraft Maintenance Organisation (AMO) that had certified the last MPI on the aircraft prior to the accident had a valid AMO approval and authority to perform maintenance on the aircraft type.

1.18 Additional Information

1.18.1 None.

1.19 Useful or Effective Investigation Techniques

1.19.1 None.

2. ANALYSIS

2.1 On 14 January 2009, the pilot took off on a private flight from FAGM to FALA, where he was cleared to join on a right base for runway 06R. On the base leg, he lowered the landing gear and immediately heard a bang. The flight controls froze, aileron control was lost and the pilot could not turn the aircraft. He declared a Mayday, informing the Air Traffic Controller (ATC) of the problem. The green light indication for the landing gear down was ON, but the ATC was requested to check visually if the undercarriage was down and the confirmation was given. The flare and touchdown on the main wheels were smooth and on centerline. As the nose was lowered, the propellers made contact with the runway.

2.2 The pilot had 41.3 hours of experience on the aircraft type. He had had no previous incident or accidents. His flight medical was valid.

2.3 There was no evidence of maintenance anomalies or defects with the aircraft reported by the pilot prior to the flight. The aeroplane had flown for 84.73 airframe hours since the last Mandatory Periodic Inspection (MPI), which had been certified without any problem.

2.4 The sequence of events leading to the accident could have been as follows:

2.4.1 The nose wheel was replaced after the tyre change, and two spacers were inserted on one side of the wheel, resulting in its being off-centre.

2.4.2 The aircraft took off from FAGM to FALA and the undercarriage was retracted.

2.4.3 On arrival at FALA, the undercarriage was lowered during base leg and only the main landing gear extended. Because the nose wheel was stuck in the wheel compartment, the push-pull rod was unable to push the nose-gear; the torque tube bent and pressed against the aileron cable, resulting in a loss of aileron control. The aircraft landed with the nose gear still retracted, and the propellers struck the runway surface.

3. CONCLUSION

3.1 Findings

- 3.1.1 The pilot was licensed and qualified for the flight in accordance with existing regulations.
- 3.1.2 The maintenance records indicated that the aircraft was equipped and maintained in accordance with existing regulations and approved procedures.
- 3.1.3 The nose wheel was replaced incorrectly.
- 3.1.4 The nose gear did not extend.
- 3.1.5 The torque tube bent and pressed against the aileron control cable, resulting in a loss of control.
- 3.1.6 The aircraft landed with the nose gear retracted, resulting in a prop strike.
- 3.1.7 Weather was not considered a factor in this accident.

3.2 Probable Cause/s

- 3.2.1 The aircraft landed with the nose gear retracted due to incorrect fitment of the nose landing gear.

4. SAFETY RECOMMENDATIONS

- 4.1 None.

5. APPENDICES

- 5.1 None.

Report reviewed and amended by Advisory Safety Panel: 29 September 2009.

-END-